The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 24. NO. 30. TULSA, OKLAHOMA, DECEMBER 17, 1925

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$6 a Year
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California Big Factor in Oil Situation

Highest daily average estimated production this year, week ended May 30, 2,347,984 bbls. Lowest January 3, 1,911,730 bbls.

Continued High Production in That State Practically Assured for at Least Another Six Months

By Andrew M. Rowley

Highest daily average estimated light oil production this year, week ended January 17, 1,525,220 bbls. Lowest July 18, 1,374,173 bbls.

The temporary spurt in production of the deep sand area of the Garber Field in Oklahoma early this week, due to the completion of two large wells there, failed to detract attention of operators keeping in close touch with conditions in the petroleum industry, from the situation in California. Likewise the fairly large drop in crude oil production during the past week should not create undue optimism on the part of those who are desirous of crude price increases within the near future. There seems to be but little doubt but that prices of crude oil will be increased in the Mid-Continent area within the near future, probably shortly after the first of the year. The increase in the Eastern Fields last week had been expected.

California will wield as great an influence on the general petroleum situation within the next six months as it has during the past year or so. An interesting view of the California situation is contained in an article on page 22 of this issue. Some operators in the Mid-Continent area, at least, feel the estimate of 607,000 barrels production in California next July is low. The extension of the Ventura Avenue Field and the important development in the Long Beach Field extension are only indications of what may happen in California and the fact should be kept in mind 65,000 barrels daily production in that State is shut in.

The production of the Mid-Continent area is slipping slowly and may be expected to decline further. The increase at Garber early this week is but a temporary condition and that field will continue to decline. The paying of premiums for crude in the Mid-Continent will result in crude price increases. The large purchasers will be forced to increase prices to maintain connections. But the fact remains that increases in prices in the Mid-Continent will place California in just that much better a position to send its crude and refined oils to the eastern markets and compete with Mid-Continent and eastern producers and refiners. With a substantial price differential, eastern buyers naturally will take more crude and refined oils from California producers, with a resultant lessening of the orders placed in the Mid-Continent.

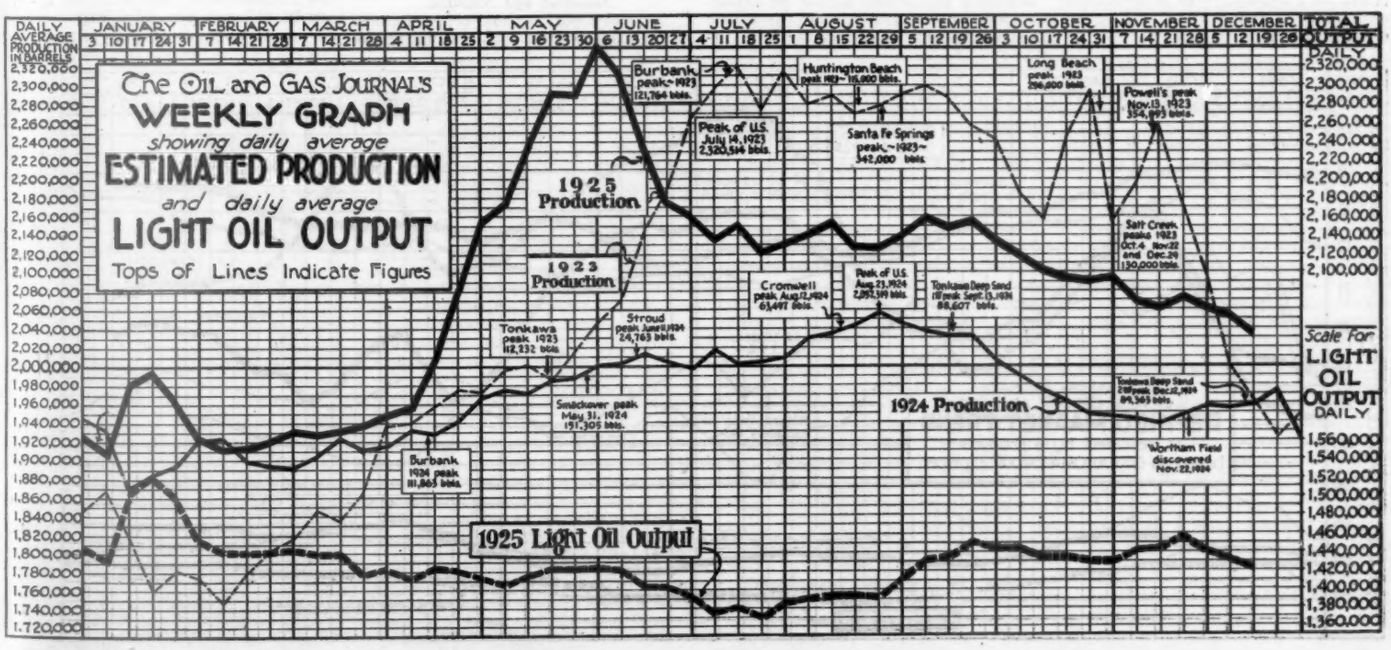
Continued prosperity is better than high prices for a brief period. Conditions in the industry as a whole are good and conservatism in the matter of price increases at this time will insure prosperity.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended December 12, and a comparison with the previous week follows:

	Dec. 12		Dec. 5	
	Light	Heavy	Light	Heavy
Oklahoma				
Tonkawa	41,990	.....	40,770	.....
Burbank	46,895	.....	47,545	.....
Other Osage Fields	33,155	.....	32,990	.....
Cushing and Shamrock	22,805	.....	22,820	.....
Bristow and Eastern Bristow	31,210	.....	30,910	.....
Cromwell	20,830	.....	21,070	.....
Papoose	13,850	.....	13,210	.....
Garber	41,930	.....	49,010	.....
Blackwell-Braman	9,020	.....	9,685	.....
Davenport	20,745	.....	20,845	.....
Thomas	15,995	.....	16,390	.....
Northern Miscellaneous	103,240	.....	103,265	.....
Southern Fields	63,545	.....	63,485	.....
Total Oklahoma	465,210	.....	471,995	.....
North Louisiana	44,870	.....	45,300	.....
Arkansas—				
El Dorado and Calion	8,000	.....	8,020	.....
Smackover Light	20,930	.....	21,340	.....
Smackover Heavy	.....	168,985	.....	175,455
Stephens and Nevada	3,020	.....	3,060	.....
Total Arkansas	31,950	168,985	32,420	175,455
North Central Texas	168,810	.....	170,365	.....
Powell	36,600	.....	36,600	.....
Mexia, Currie, Richland, etc.	19,520	.....	19,070	.....
Wortham	13,700	.....	13,440	.....
Kansas	103,715	.....	103,620	.....
Total Mid-Continent Area	884,375	168,985	892,810	175,455
Gulf Coast	.....	96,465	.....	96,072
Southwest Texas	.....	42,540	.....	41,795
Eastern	105,800	.....	105,500	.....
Rocky Mountain Area	106,906	.....	109,102	.....
California—				
Santa Fe Springs	53,000	.....	53,000	.....
Long Beach	109,000	.....	109,000	.....
Huntington Beach	45,000	.....	45,500	.....
Torrance	5,000	27,500	5,000	27,500
Dominguez	25,000	.....	26,000	.....
Rosecrans	25,000	.....	25,500	.....
Inglewood	27,000	39,000	26,000	42,000
Remainder of State	42,000	236,000	40,000	238,000
Total California	331,000	302,500	330,000	307,500
Total United States	1,428,081	610,490	1,437,412	620,822
Grand Total	2,038,571		2,058,234	

Total Decrease, 19,663 Bbls.; Light Oil Decrease, 9,331 Bbls.


The OIL and GAS JOURNAL'S
WEEKLY GRAPH
showing daily average
ESTIMATED PRODUCTION
and daily average
LIGHT OIL OUTPUT
Tops of Lines Indicate Figures
DAILY AVERAGE PRODUCTION IN BARRELS
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
TOTAL OUTPUT DAILY
1925 Production
1923 Production
1924 Production
1925 Light Oil Output
Burbank peak—1923 121,764 bbls.
Peak of U.S. July 14, 1923 2,320,514 bbls.
Huntington Beach peak 1923—115,000 bbls.
Long Beach peak 1923 256,600 bbls.
Powell's peak Nov. 13, 1923 324,193 bbls.
Santa Fe Springs peak,—1923— 342,000 bbls.
Tonkawa peak, 1923 112,332 bbls.
Stroud peak June 11, 1924 24,763 bbls.
Cromwell peak Aug. 12, 1924 61,497 bbls.
Peak of U.S. Aug. 21, 1924 2,293,349 bbls.
Tonkawa Deep Sand 1st peak Sept. 13, 1924 88,607 bbls.
Smackover peak May 31, 1924 151,305 bbls.
Burbank 1924 peak 111,865 bbls.
Salt Creek peaks 1923 Oct. 4 Nov. 22 and Dec. 29 130,000 bbls.
Tonkawa Deep Sand 2nd peak Dec. 12, 1924 99,363 bbls.
Wortham Field discovered Nov. 22, 1924
Scale For LIGHT OIL OUTPUT DAILY

Oklahoma Motor Fuel Prices Decline

Soft Undertone Develops in Group 3 Refined Market Following Period of Sluggish Movements. Export Purchase Aids Kerosene

By Neil Williams

Accompanied by declining prices, a soft undertone developed in the Oklahoma (Group 3) refined market the past week. Noticeable first only in gasolines, the weakness spread to fuel oils although Monday and Tuesday the latter were holding their own again. Kerosene and some grades of natural gasoline continued strong.

Gasoline prices dropped during the week from a quarter to a half cent, this being felt particularly in higher gravities. The soft tone in fuel oil was reflected more in the products being slightly easier rather than in actual price concessions.

The decline in U. S. Motor gasoline prices marked the climax of a steadily advancing market since the last week in October when prices climbed from 8¼ cents to a market of 10¼ to 10½ cents. However, the weakness came as a surprise to many who had expected the market to remain at least steady the remainder of the year.

Effect of Exports

The reaction in the gasoline market is attributed directly to the failure of exporters to continue purchases of higher gravity gasolines, but a sluggish domestic movement of other products emphasized the situation. Some market students point out that the strong markets of the past six weeks were due entirely to heavy export purchases of higher gravity gasolines. This belief was borne out in the fact that as soon as the export buying stopped the market stopped its climb, prices became steady and last week started downward again.

It was pointed out in last week's market review that unless additional export or domestic buying developed, or advances materialized in the posted crude schedules and tank wagon quotations in the Standard Oil Co. of Indiana territory, Group 3 refined prices probably would not increase.

So far no new buying has developed nor have crude and tank wagon advances materialized. While new buying in important quantities now is not expected, at least in the next few weeks, it still is generally felt that the Mid-Continent is due for a crude advance to be followed possibly by a Standard Oil Co. of Indiana tank wagon increase.

A general increase in eastern crudes during the week was expected to strengthen indirectly the Group 3 refined market but apparently there was no material change in the situation early this week.

Fear Reaction

Although Oklahoma refiners expect a Mid-Continent crude advance to strengthen refined markets, most of them agree that such an advance now or early in January would not be the best thing in the long run for the industry. All point out that although prices might be advanced now, a reaction in all probability would occur during the spring, causing a duplication next year of this past summer's unfavorable market conditions.

However, as a result of the strong crude situation now, together with decreases in production of refined products the past two weeks, Oklahoma refiners have been able to prevent a rapid decline in markets and some consistently have maintained higher quotations in the face of increasing quantities of cheaper products being offered from other sources.

The softening Group 3 prices were in direct contrast to markets of other districts, especially the Atlantic Seaboard, where all products have been increasing in strength. This situation, together with an upward trend in tank wagon markets generally, has helped to prevent Oklahoma refiners from losing confidence in the situation.

Gasoline and Naphtha

As mentioned, gasoline prices declined from a quarter to a half cent during the week, the greatest weakness showing in the higher gravities. This, as explained, was perhaps due to the lack of demand for higher gravity gasolines by exporters. The 64-66 375 grade Tuesday was available in the Group as low as 12⅜ cents, although the majority of sources quoted 12½ cents. A few scattering domestic cars were reported purchased for 12¼ cents but these were not verified. The 60-62 400 gasoline was able to hold fairly firm at 11½ cents as little of that product is being made. The 68-70 350 gasoline declined a quarter cent to 13¼ to 13½ cents, although a few refiners maintained quotations at 13¾ cents.

The U. S. Motor gasoline was quoted freely at 10 cents Tuesday but even at that figure no activity was shown. Some of this hesitancy to buy perhaps was due to reports of gasoline as low as 9¾ cents, causing buyers seeking this product either to shop for this price or bide their time, expecting the market to be generally at that lower figure before many days. So far as could be learned, most of the 9¾-cent motor gasoline offered was somewhat off grade and could not be classed as strictly 58-60 437 (U. S. Motor) gasoline. However, a few offers of good motor gasoline were reported at 9⅞ cents. On the other hand a number of refineries maintained quotations at 10¼ cents.

The 56-58 450 gasoline and the 50-52 450 naphtha were still more inactive than the other products as might be expected under the general market conditions. The 56 gasoline easily was available at 9½ cents, although few sales were reported

(Continued on Page 137)

REFINED MARKET BAROMETER

Refined markets of the country were somewhat spotted the past week. A soft undertone, accompanied by price declines, was felt in some products, particularly gasoline, in Mid-Continent and Chicago districts but greater strength developed in nearly all products in the Atlantic Seaboard. In other areas markets were generally unchanged. Kerosene on the whole was firm due to export demand, this being reflected again by additional tank wagon advances in eastern and southern States. Fuel oil and gas oil were firm to strong with movement generally showing improvement although in Oklahoma a local sluggishness caused a slight weakening in the situation there. Lubricants were steady in all areas with somewhat better demand shown. Natural gasolines also were spotted, some grades being weak while others maintained firmness.

Mid-Continent—A soft undertone was felt in parts of the Mid-Continent during the week, largely due to a let-up in export buying and sluggish domestic demand for gasoline. Gasolines as a result were generally lower in prices in Texas, Oklahoma and Kansas but firm in other areas. Kerosenes were generally strong, the Texas situation still being tight. Fuel oil and gas oil developed some weakness in Oklahoma but in other districts strong markets continued. Natural gasolines continued fairly steady but blended products found difficulty in being moved. Lubricants were steady with movement good in Oklahoma. Other products unchanged.

Atlantic Seaboard—The weakness which developed in some parts of the Mid-Continent was not reflected in Atlantic Seaboard markets where nearly all products continued firm, especially kerosene. Demand for gasoline increased but additional tank wagon advances failed to materialize. The improved kerosene markets were reflected in additional tank wagon advances. Gas oil, fuel oil and lubricants continued firm with better improvement on lubricants, particularly red and pale oils. Wax and petrolatum markets quiet.

Pennsylvania—Pennsylvania refined markets continued to improve, accompanied by price advances in gasoline and lubricants. Kerosene movements good.

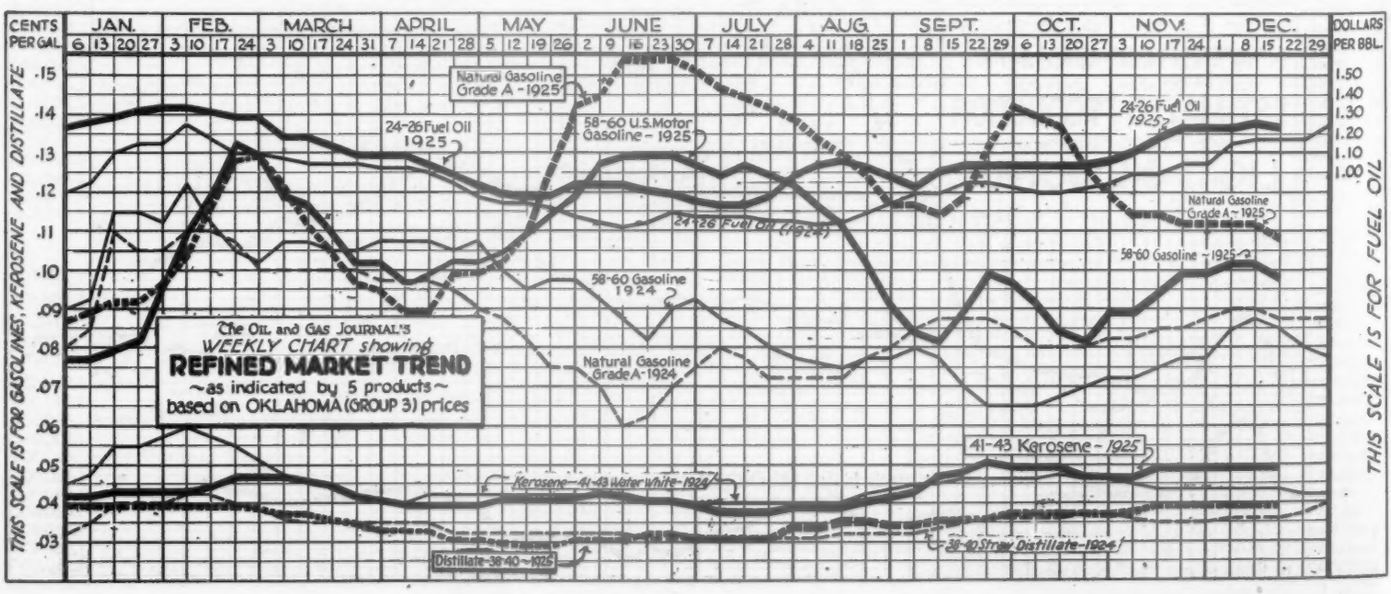
Chicago—Chicago refined markets continued quiet. Price concessions made to move kerosene. Fuel oil and gas oil unchanged. Lubricants stronger. Kerosene firm.

California—California refined markets unchanged but better feeling prevails.

Gulf Coast—Gulf Coast markets slow. Demand for products most from domestic buyers. Export business light. Gas oil slightly stronger. Fuel oil unchanged.

WHAT IS GROUP 3?

The Oil and Gas Journal, in connection with its weekly market reports, is occasionally asked what is meant by the Oklahoma (Group 3) and why prominence is given to its tank car markets. An article with maps on Page 136 of this issue answers these queries.



Better Outlook Now Than a Year Ago

Notwithstanding an Immense Increase in Annual Production the Crude Market is Stronger and Conditions are Generally Improved

By James McIntyre

The petroleum industry approaches a new year with a more hopeful outlook than at any time in the past five years, but with a few rough places yet in the road which a little time and new conditions may smooth out.

The year now closing has been a good one for the producer and for companies with complete organizations that include production, transportation, refineries and facilities for marketing. It has not been so good for the refiner without production. The producer has had a better price for crude than at any time since the World War. The refiner without production, while experiencing a year of better prices for refined products, has done so on a higher crude market.

Let us look back a year and recall conditions at the close of 1924, so that a better view can be had into what is ahead of the industry at the close of 1925. A few comparisons as to crude prices may be interesting, because they show an improvement at this time over those of a year ago, and offer better chances of further advances in the year to come than the producer faced one year ago.

In the territory comprising Kansas, Oklahoma and North and Central Texas the posted price of crude on December 12 of last year and on the same date this year compared as follows:

Gravity	Dec. 12, 1924	Dec. 12, 1925	Increase in price
28-28.9	$ .75	$1.15	$ .40
29-29-.9	.75	1.23	.48
30-30.9	.90	1.31	.41
31-31.9	.90	1.39	.49
32-32.9	.90	1.47	.57
33-33.9	1.10	1.55	.45
34-34.9	1.10	1.63	.53
35-35.9	1.10	1.71	.61
36-36.9	1.25	1.79	.54
37-37.9	1.25	1.87	.62
38-38.9	1.25	1.95	.70
39-39.9	1.25	2.03	.78
40-40.9	1.25	2.11	.86
41-41.9	1.25	2.19	.94
42-42.9	1.25	2.27	1.02
43-43.9	1.25	2.35	1.10
44 and over	1.25	2.43	1.18

Crude Oil Prices Higher

It will be seen by the above table that the purchasers of crude are paying a very much greater price for oil in the territory at this time than a year ago. In the case of the Prairie, Magnolia, Texas, Cosden, Gulf, Sinclair, Humble, Empire and Oklahoma pipe lines the increases ranged from 40 cents to 94 cents for the bulk of the oil they bought. The highest gravity crudes in the territory, 42 degrees and above, produced in Kay, Noble and Garfield Counties, Oklahoma, commanded a higher price than $1.25 a year ago, the Marland Refining Co. and other local purchasers paying $1.29 for oil of 43 gravity and over. These crudes now are commanding from 98 cents to $1.14 more than a year ago, the buyers being, for the most part, companies with nearby refineries. But every producer in the big territory in the three States enjoyed a substantial increase in the price of his product, no matter where it was produced, nor to whom he so'd.

In every field east of California with the exception of the heavy oil district in Smackover, Arkansas, where the price is the same this December as a year ago, there were more or less advances in the price of crude in the course of the year. Prices settled back to those of last December in Gulf Coast crudes, owing to new supplies growing out of this year's discoveries. In Wyoming, Salt Creek crude in December, 1924, was quoted at 85 cents per barrel. In December this year, on a gravity basis, oil from that field is quoted from $1.23 to $1.87 per barrel. Pennsylvania grade crudes have advanced 80 cents per barrel. Central west crudes, produced in North and Central Ohio, Indiana, Kentucky and Illinois all received substantial increases. In California, crudes from which gasoline can be refined were given some advances, but the market fell back, and it is doubtful if California producers benefited as much as Mid-Continent and Eastern producers, aside from the fact that there was more production to sell. The crude that is being shipped around to the East Coast averages 26 degrees gravity and oil of this grade produced in the field sold in December, 1924, for $1.13 per barrel, while at this time it is bringing all the way from 98 cents in the Wheeler Ridge Field to $1.30 in fields closer to seaboard and refinery.

Cal'fornia Still Dominant

In the general crude situation California remains the dominant factor now as it has done since 1923 and it is expected that it will continue to do so for the next six months at least. Just now it is the only field in the United States not producing to its known capacity. Its 637,000-bbl. daily production does not represent its real potentiality as a producer. Curtailment or absolute shut down of many properties is keeping thousands of barrels a day off the market. The State is producing 30,000 bbls. a day more than a year ago. It could easily produce say 75,000 bbls. more than it did a year ago.

Oklahoma, on the other hand, is producing 55,000 bbls. a day less than it was a year ago, and is on the decline with nothing in view that can stop a steady slump. Kansas is producing 16,000 bbls. a day more than a year ago, but, like Oklahoma, it is on the decline. North Central Texas shows a 36,000-bbl. increase over December, 1924, and looks as if it can do this well, or better, for some time without opening any big fields in the West Texas area. The East Central Texas area, on the other hand, has fallen off 55,220 bbls., which indicates that the high grade fields of Texas have shown a net decline of over 19,000 bbls. a day in the course of the year. The Gulf Coast fields show a 5,850-bbl. gain and the Southwest Texas fields a 2,800-bbl. decline compared with last December.

Arkansas' Unexpected Flood

Coming into Arkansas a tremendous change is seen in the production now and one year ago. In December, Arkansas was producing 111,600 bbls. In December this year, Arkansas was showing an output around 207,000 bbls., an increase of over 95,000 bbls. a day. The Smackover Field this year produced around 50,000,000 bbls. of crude it did not know existed last December, but like Oklahoma, Kansas and North and Central Texas, Arkansas is going into the new year with all the ear marks of a declining field which will take absolutely new discoveries to bring back. North Louisiana was producing 10,000 bbls. a day more a year ago than it is at present, and it, too, is on the toboggan.

The Rocky Mountain area is one of the few high grade oil producing divisions in the country that is doing better this December than a year ago. Then the combined States of Montana, Wyoming, Colorado and New Mexico were showing around 85,000 bbls. as against 109,000 bbls. a day at this writing, and this production should be kept up if not increased.

There was little difference between the production of the field east of the Mississippi River now and a year ago.

The production of the whole United States at this time is about 103,000 bbls. a day more than at the same time last year, but Smackover heavy oil shows an increase of 109,000 bbls., indicating that, excluding this one grade of crude, there was a decline of 6,000 bbls. a day in the course of the year, and that outside of California and heavy crude in the Smackover Field there was a decline of 36,000 bbls. a day in the production of the combined other fields of the United States.

"Nothing In Sight"

The industry at this time can look into the immediate future with a better feeling than a year ago, because in mid-December of last year it was facing the approaching Wortham flood of crude which came in January when that little shoestring area in Limestone and Freestone County produced an average of 113,336 bbls. a day, which acted as a stay to an increase in the market price in the closing month of last year, delaying it until January 22, 1925, when it was seen that Wortham had passed its peak. The Dominguez Field in California was also threatening last December. Like Wortham, however, it told its story in the following month when it reached its height.

In December, 1925, there is no Wortham in sight, nor any other new field which threatens a very large production. Whatever we are to get in the way of new production in great quantity will be among the discoveries of next year. At the same time it is well to consider that in the past 12 months we have had the greatest production the country has ever seen, about 764,000,000 bbls., and that by the end of January, even with a declining production, the production for the 12 months will mount to close to 765,000,000 bbls. and the cumulative production over a 12-month period will not begin to decline until mid-winter, at least, even if no new fields are brought in and not until that time will the industry be able to breathe easy, and prepare for what the future may bring in the way of new fields.

The Marketing Situation

The pipe line situation in the Mid-Continent in mid-December presents the same picture it has for several months. The big purchasing companies with refineries, like the Magnolia Petroleum Co., Gypsy Oil Co., Cosden Pipe Line Co., Pure Oil Co., The Texas Co. and the Empire Pipe Line Co., are drawing crude from storage. They cannot find enough oil in the field to meet their current refining requirements. The Humble Oil & Refining Co. has been storing some crude since early in the fall and the Prairie Oil & Gas Co. has been putting it away on a large scale. The latter two companies were up against the direct competition of California crude purchasers and refiners. The Prairie company's market east of Cleveland was completely cut off. It could not compete with California as long as it shipped oil to the East Coast by pipe line. Then it made its deal with the Pure Oil Co., securing a half interest in the Pure pipe line from Mexia, Tex., to a Gulf port near Houston, and as the deal will be effective on December 31, the company will thereafter be in a position to give California a run for its money, and the Mid-Continent producer may have a good excuse for looking for a better price for his product.

The only thing that can stop a successful year in the oil business in 1926 will be big fields altogether unknown at the close of 1925. All the producer need do is wait awhile until more of the enormous excess production of 1925 has been digested and the Mid-Continent Field has been placed in closer competition with the Pacific Coastal fields. The situation is at a crisis and only requires a little good judgment on the part of producer and refiner. It would be unwise to force a situation now which would precipitate the demoralized conditions of other years.

DISCOVERY DEPLETION AMENDMENT AS DRAFTED BY HOUSE COMMITTEE

By Charles E. Kern

WASHINGTON, D. C., Dec. 14.—A proposal to amend the depletion and discovery provisions of the 1926 Revenue Bill as affecting the oil industry was voted down in the House of Representatives today, and it is believed that the section as drafted by the Committee on Ways and Means will pass the House without amendment. The amended section as introduced in the House Bill reads as follows:

"In the case of oil or gas wells discovered by the taxpayer on or after January 1, 1925, in an area not proven at the date of such discovery, where the fair market value of the property is materially disproportionate to the cost, the basis for depletion shall be the fair market value at the date of discovery or within 30 days thereafter of the property proven by such discovery and included within the taxpayer's tracts or leases. In the case of oil or gas wells, each well producing oil or gas in commercial quantities shall be considered as having proven at least that portion of the productive sand, zone or reservoir which is included in a square surface area of 160 acres having as its center the mouth of such well. In the case of the discovery of an oil or gas well by a person under an agreement whereby the cost of the well shall be shared with one or more other persons, or whereby the cost of the well shall, if oil and gas in commercial quantities is not found, be shared with such other person or persons, then such well shall not be considered as having proven any part of a tract or lease held by such other person or persons."

The other provisions of existing law regarding mine depletion and discovery are unchanged.

Senator Couzens, Republican, Michigan, will oppose discovery allowances in any form when the bill reaches the Senate.

The House Committee voted to request the Treasury Department to give its opinion on the advisability to adopting the section in the form here given and that opinion will be before the Senate when the bill is taken up there.

Amendment Defeated

An amendment by Representative Lozier, Missouri, to amend the discovery depletion section to extend the area proven by an oil well in a new field to 5 miles from the center of the mouth of the well today brought Representatives Montgomery, McKeown, Hastings and Carter of Oklahoma and Garner of Texas to their feet with objections.

The Lozier amendment was voted down, leaving the area proven by a well at 160 acres or a quarter of a mile from the mouth of the well.

Congressman Montgomery said that even the 160-acre section on discovery

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California, 607,000 Barrels Next July

That Estimate on Production Made By Pacific Coast Official With 565,000 Barrels Figured for December 31, 1926

By W. E. Dunlap*
Chief Geologist and Assistant Manager of Production, United Oil Co.

California production for November averaged approximately 640,000 bbls. per day.

I estimate California production will be 607,000 bbls. on July 1, 1926, and on December 31, 1926, production will have declined to 565,000 bbls. per day. I believe with the exception of possibly two pivotal fields, Long Beach and Ventura Avenue Field, that there will be a general decline within the first six months of 1926 of 90,000 bbls. daily, and from the present to December 31, 1926, a decline of approximately 150,000 bbls. daily. However, I believe that the Los Cerritos extension of Long Beach Field will upset this decline to such an extent that by July 1, 1926, this field will increase production 58,000 bbls. per day, so that instead of a production of about 550,000 bbls. per day for July 1, 1926, we will have the above figure of 607,000 bbls. per day. This extension to the Long Beach Field will undoubtedly have its maximum flush production during the first six months of 1926, after which time the rapid decline usually experienced in flush fields will take place, and by December 31, 1926, the production will have dropped off to 565,000 bbls. a day.

The other present flush field that could materially upset the production is the Ventura Avenue Field, now producing about 30,000 bbls. per day.

Ventura Avenue Field

The limits of this structure have not been defined, since no dry holes have yet been drilled along its present known border. The producing zone is 7,500 feet long by one-half a mile in width. Although many of these wells have come in with a high production of from 3,000 to 4,500 bbls. per day, with an immense head of gas, and have declined comparatively fast, due to liberal spacing of these wells, it cannot be considered a rapid decline compared with other flush fields. So that the field has a high potential possibility of influencing future production. However, due to control of this field by three major companies and the economic spacing of wells, it is not likely that it will do more during the next year than hold an even production, but with its high potential could undoubtedly be used to speed up production if needed.

Inglewood, which has been such an important factor during the past year, is rapidly declining and although deeper production is not disproven, even if found should not constitute a serious menace towards overproduction.

I do not regard any other of the southern fields or any northerns fields as disturbing factors, and see for them only decline and, in this connection, a rather rapid decline in the case of the Rosecrans Field, which some months ago reached its peak.

A detailed tabulation of estimates of field production as comprised in the above figures, together with the present shut-in production, follows:

California Production

Field—	Present Prod.	Est'd July 1, 1926	Est'd Dec. 31, 1926
Coyote	18,000	17,500	17,000
Dominguez	26,000	20,000	16,000
Fullerton and Whittier	15,300	15,000	14,500
Huntington Beach	44,500	40,000	38,000
Inglewood	69,000	50,000	40,000
Long Beach	113,000	133,000	127,000
Los Angeles and Salt Lake	1,950	1,900	1,850
Montebello	19,000	19,000	18,500
Richfield	11,500	11,000	10,500
Rosecrans	25,500	12,000	9,000
Santa Fe Springs	53,400	45,000	40,000
Summerland	135	130	120
Torrance	32,000	30,000	28,000
Ventura-Newhall	37,000	37,000	30,000
Belridge-Lost Hills	4,550	4,500	4,400
Coalinga	19,600	19,200	19,000
Elk Hills	27,000	27,000	26,500
Kern River	12,400	12,200	12,000
McKittrick	5,600	5,500	5,400
Midway-Sunset	100,000	100,000	100,000
Santa Maria	6,500	6,200	6,000
Wheeler Ridge	1,010	1,000	1,000
Miscellaneous (Newport and Watsonville)	129	125	120
Total	643,074	607,225	564,895

Shut-In Production

	Barrels
Coalinga	17,745
East Coyote	1,575
Elk Hills	11,865
Fullerton and Whittier	3,435
Kern River	5,980
Lost Hills-Belridge	5,230
Midway-Sunset	8,215
Santa Maria	6,390
Torrance	2,495
Total shut-in	62,930

Possibility of New Fields

The possibility of the opening up of new fields is highly speculative, more so perhaps in southern California than ever before because the process of elimination caused by wildcatting in the past six years has gone far in reducing the probable area in which new fields could be discovered. There is, however, a slight probability of the discovery of at least one new field during the coming year, with a possibility of two new fields; but I do not believe their influence will be a disturbing factor in an estimate of probable production between now and January 1, 1927. In this connection I might say that Seal Beach will undoubtedly constitute one of the new fields, but development up to date seems to point to this structure as one of limited area requiring deep drilling to reach the first pay sand, which is not conducive to overdevelopment. I believe that it will not be a material factor in production during the next year.

In estimating California's production for the next six months and for the next year, the opening up of the present shut-in production of 63,000 bbls. per day of heavy oil was considered. However, assuming that the whole 63,000 bbls. a day now shut-in were opened up, I believe it would not materially upset the figures given, because this would undoubtedly be gradually absorbed into the whole. A similar condition existed in 1924, at which time 85,000 bbls. of shut-in production were opened up, and notwithstanding California production in the same year declined 100,000 bbls.

Crude Oil Stocks

Now as to stocks: Stocks of heavy and light crude oil on hand in California, which have been continually increasing for some years, have now reached a figure of 124,000,000 bbls. These stocks held at a comparatively high storage cost, have presented such a problem to holders as to have caused a material reduction in the price of all crude oil in September, 1925. This reduction, of course, was to place the price at a figure that would enable California oil to compete with other oils on the Eastern, Gulf Coast and foreign markets. Notwithstanding the fact that this comparatively huge stock has been built up and has caused a downward trend of prices, allow me to present a few figures leading up to the conclusion that, considered in the light of consumption, it is not such a huge supply as it might seem.

Storage of heavy crude oil under 20 degrees Baume gravity in California on November 1 was 81,000,000 bbls. At the November rate this storage was increased at the rate of 2,500,000 bbls. a month. Fuel oil requirements of California and bordering States served by rail are approximately 2,300,000 bbls. per month. Marine shipments require approximately 6,200,000 bbls. per month, making a total consumption of fuel oil of 8,500,000 bbls. per month. At which rate this so-called immense supply, assuming the present rate of consumption which is continually growing, would be used up in a little more than a year's period.

Fuel Oil Shipments

Tanker shipments of fuel oil averaging about 6,000,000 bbls. per month have undoubtedly not reached their peak. Stimulation of the market by heavy buying will increase this rate very materially within the next few months, and leave us still further in arrears on our available storage.

California storage November 1 of refinable crude oil higher than 20 degrees Baume gravity was approximately 43,000,000 bbls., and at the November rate was increased at the rate of approximately 1,000,000 bbls. per month. Estimates place the consumption of this refinable crude at 9,000,000 bbls. a month. Subtracting the storage rate which I have noted of 1,000,000 bbls. a month from this figure, we have a consumption rate of 8,000,000 bbls. a month and, as noted, a supply of 43,000,000 bbls. a month. Which leads us to the conclusion that we have only a reserve supply on hand for a little less than six months' run for refineries.

Right here in the discussion of consumption we arrive at the real crux of the situation. California's normal consumption is that oil supplied to the State itself, Pacific Coast and neighboring bordering States, which some experts place at 450,000 bbls. per day. Consumption in this sense is a hard figure to arrive at because in the assembling of figures by various statistical agencies no compilation is made that immediately discloses it. However, I prefer a slightly more conservative figure than that used by some statistical experts. For the purpose of this discussion we will say that this normal consumption is 400,000 bbls. a day. Since I have placed California's production at 565,000 bbls. per day by January 1, 1927, it is readily seen that our consumption curve is rapidly climbing to meet the descending production curve, and at even the present rate of consumption of 400,000 bbls. per day, which is gradually, if not rather rapidly, increasing. Just how soon our production will be lowered to such a point that California can only take care of what might be termed local or Pacific Coast requirements, is speculative, of course. Prophets of the past 15 years have visualized the meeting point of consumption and production a great many times, but new fields have as often upset these calculations, and there is, of course, a similar if a considerably less chance for them to be upset again. However, it is impending we know, and cannot possibly be very far off.

California's Influence

Now, as to California's influence on the national situation: National production of crude oil is slightly over 2,000,000 bbls. a day, and California is now producing somewhat less than one-third of it. National crude oil storage is approximately 400,000,000 bbls., of which California holds about one-third. With the present low prices obtaining in California, and cheaper facilities by water to eastern markets than the Mid-Continent pipe line rate, we are naturally the

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*Delivered at the meeting of the American Institute of Mining and Metallurgical Engineers, southern California section, Los Angeles, December 8, 1925.

ROCKEFELLER DONATION STARTS PETROLEUM RESEARCH PROGRAM

By L. M. Fanning

The initiation of a program of scientific research in petroleum provided for by John D. Rockefeller's pledge of a fund of $250,000 to the American Petroleum Institute meets with widespread approval in the industry. Oil company officials are agreed that the time is ripe for such organized research to supplement the work that is being done by individual companies, and they believe it fitting that Mr. Rockefeller, whose contributions to research in the medical and other fields have had such momentous results, should have led the way in the field in which he has been so prominently identified.

Members of the board of directors of the American Petroleum Institute stated after the meeting at which the donation was accepted that they regarded the research plan as one of the most important developments in the petroleum industry in recent years. J. Edgar Pew, president of the institute, said he believed real results could be expected from the studies of scientists of problems of such a broad nature as to preclude their thorough investigation by single companies or individuals, and that it was important to stress that discoveries made under the Rockefeller plan will be for the benefit of the whole industry and the public generally. The opinion was also expressed by officers of the institute that the identification of the institute with scientific research is a highly important constructive step in its activities.

Henry L. Doherty, president of Henry L. Doherty & Co., said he was taken entirely by surprise at the meeting of the board when the letter was read from Mr. Rockefeller donating $50,000 a year for research work in petroleum for five years, and that he was impressed by the importance of the gift in connection with the stimulation it would give petroleum investigation throughout the scientific field.

"It is needless to say that I was very much pleased and I think everybody else will be not only pleased but will have the pleasant reaction that Mr. Rockefellr has not forgotten or lost interest in our industry," he said. "I do not think it will be possible to calculate the good that has been done for the human race through Mr. Rockefeller's contributions to medical research. Without disrespect to the church or the court, the modern research laboratory is the one greatest agency in the search for truth. A quarter of a million for research work related to our industry may be far from a sufficient sum to do all that is needed, but, nevertheless, it is a large contribution for a single individual, and it will probably stimulate more research work than it directly provides for."

Central Plan

Mr. Rockefeller's donation is hailed with satisfaction by the scientific fraternity which for some time has appreciated the necessity of developing fundamental research work under a central plan. E. L. De Golyer, vice president and general manager of the Amerada Petroleum Corp., formerly chairman of the Petroleum Division of the American

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Withdraw Ouster Case; New Suit Filed

Missouri Attorney-General Seeks Fines From Oil Companies Under Cracking Process Agreements. Barrett Action Weak

JEFFERSON CITY, Mo., Dec. 12.—A new suit charging violation of the Missouri anti-trust laws, price fixing and division of sales territory in restraint of trade have been filed against the Standard Oil Co. of Indiana by Missouri's attorney general, North T. Gentry, of Columbia. This time, however, the State seeks to oust, or possibly to fine, the White Eagle Oil & Refining Co., The Texas Co. and the Standard of Kentucky, in addition to the Indiana corporation, the defendant in the original ouster suit filed in September, 1924.

The charges obtained in the new action are virtually the same as in that instituted by Jesse W. Barrett, former attorney general, who retired from office January 12, last. The succeeding attorney general, Robert W. Otto, freely admitted that the suit was a "white elephant" on his hands; that there was little evidence aside from contracts covering "cracking" patents, which the defendant admitted contained territorial restrictions, but which have never been put into effect. The State has no evidence to prove that the contracts have been enforced.

Otto, now a member of the State Supreme Court, freely admitted to the correspondent on one occasion that he was in a quandary over the situation and was considering dismissal, but the case was inherited by Gentry. Here was an opportunity to dismiss the old suit, of which he was possibly as fearful as Otto, and to file a new one, thus killing the proverbial two birds.

Admittedly Weak

The Barrett action was admittedly weak because it asked the Supreme Court to rescind its order of 1913 suspending the ouster of the Standard of Indiana obtained by Herbert S. Hadley, then attorney general, thus leaving the court, if it did find the corporation guilty, nothing to do but to order its property confiscated and its license to operate in the State rescinded. This, it was generally agreed the court would not do, because of the financial loss to the State resultant from such a move. The company could not be fined under the Barrett suit because it already had accepted a fine and paid it in the Hadley case.

A further weakness in the Barrett suit was discovered when the United States Supreme Court handed down a decision ruling that where such territory restrictions exist as in the Standard of Indiana "cracking" contracts, if unenforced, then there is no violation of the anti-trust law. This is in direct contravention to the Missouri anti-trust statute, but again there appeared the spector of the Missouri Supreme Court, which has been known to base some of its rulings upon Federal decisions. What would the court do? It certainly was not an iron-clad case.

Gentry came into office and saw his opportunity. The case might be weak, but he could strengthen it some by filing a new petition for a writ of quo warranto, or ouster, which would enable the court to fine the defendant companies, instead of ousting them, if found guilty. Then, too, the new case will necessarily have to drag along for a long time.

Gentry's only comment upon filing the suit was, "I am withdrawing the motion in the Standard Oil Co. case that was filed by Attorney General Barrett some two years ago. That was proper at that time and the same resulted satisfactorily, as far as it went. But the motion simply asked the court to oust the Standard Oil Co. of Indiana, while the petition that I am filing asks for an ouster and fine of the Standard Oil Co. This gives the Supreme Court the right to oust the company or impose a fine, or both."

He did not give his reasons for including the Standard of Kentucky, White Eagle or The Texas Co., as codefendants in the suit.

Text of Petition

His petition charges:

"Relator further informs the court that said respondents (Standard of Indiana, Standard of Kentucky, White Eagle and The Texas Co.), have, since the 28th, of June, 1913, entered into, become members of and participated in a pool, trust, agreement, combination, confederation and understanding among themselves, and with each other, and with diverse other foreign corporations engaged in like business, but not licensed or authorized to do business in Missouri, which said pool, trust, agreement, confederation and understanding tends to and does directly result in restraint of lawful trade in the full free and unrestricted competition within the State of Missouri in the refining of petroleum, and in the sale and distribution of petroleum products, including gasoline, kerosene, naphtha, benzine, lubricating oils and other products of petroleum; which tends to and does regulate, fix and control the prices of said products and commodities to the public, and to maintain said prices when fixed; and which tends to and does limit the quantity or supply of said products and commodities in this State.

"Relator further informs the court and charges that said pool, trust, agreement, combination, confederation and understanding was entered into and participated in by said respondents for the purpose of, and with the design to fix, regulate and control the prices of said products and commodities to the purchasing public and to maintain the prices thereof when fixed; and for the purpose of and with the design to limit and restrict the quantity or supply of said products in this State; and to limit and restrict the territory of operations in the refining of petroleum, and in the purchase and sale of petroleum products, including gasoline, kerosene, naphtha, benzine, lubricating oil and other products of petroleum, to lessen and restrict lawful trade, and full and free competition therein.

"And relator states and charges the fact to be that in pursuance of said pool, trust, agreement, combination, confederation and understanding among respondents, for the accomplishment of the unlawful purpose aforesaid, the territory of Missouri has been set apart and named as one of a group of States for the exclusive trade of the respondent, Standard Oil Co. of Indiana, and has become known and designated in contracts, licenses, agreements and understandings, entered into and participated in by said respondents with each other, and each with the Standard Oil Co. of Indiana; as the territory of the Standard Oil Co. of Indiana; that said territory of Missouri is also so designated in contracts and licenses which the respondent, Standard Oil Co. of Indiana, has at different times, subsequent to the 28th day of June, 1913, entered into with divers other foreign corporations doing a like business, but not licensed in the State of Missouri; that by reason of said licenses, contracts, agreements and understandings to which all the respondents have assented and participated in, the respondent, Standard Oil Co. of Indiana, controls, and has become invested with power to control the gasoline and petroleum trade in the territory of the State of Missouri. . . ."

Other Companies

Gentry further charges that other large oil companies through and because of these "cracking" process licenses refused to compete with the Standard in this State, and that the White Eagle and Standard of Kentucky have in their agreements with the Indiana corporation subjected themselves to penalties not only if they sold petroleum products in Missouri, but if they permitted their agents or dealers to do so.

The three companies are denounced as being guilty of "illegal, willful and malicious usurpation and abuse of the licenses, franchises and authorities, severally granted to them by the State of Missouri" and, therefore, the attorney general prays the court that "each respondent corporation may be excluded from all corporate rights, privileges and franchises exercised or enjoyed by it under the laws of the State of Missouri, and that its franchise, license and certificate to do business in this State be declared forfeited, and that all or such portion of its property as the court may deem proper, be confiscated unto the State or in lieu thereof a fine be imposed upon it in punishment of the perversion, usurpation, abuse and misuse of its franchise or license as herein described."

CONVENTION OF MONTANA CHAPTER OF ROCKY MOUNTAIN ASSOCIATION

GREAT FALLS, Mont., Dec. 12.—The first annual convention of the Montana Chapter of the Rocky Mountain Oil & Gas Association, held here, was attended by more than 350 members and guests from 10 States. The annual meeting of the parent association was included this year in the Montana chapter's meet at Great Falls.

The meeting was called to order by President A. Judson Findley, who is also president of the Western Exploration Co. The invocation was given by Rev. H. Styles Harris, after a short address of welcome by President Findley. Mayor Harry Mitchell welcomed the members on behalf of the city and A. E. Wiggins for the Great Falls Chamber of Commerce.

E. B. Coolidge
President

WALTER F. BRITTAN
Secretary

President's Address

"Exchanges of information among operators has come to be a vital factor operating to the benefit of the industry," President Findley said.

"A few years ago," he declared, "it was not uncommon to see barbed wire entanglements around a drilling well, but experience soon taught that this method shut out more information than it shut in.

"The hazard attending the oil and gas industry makes more imperative organization and cooperation within the same. The distance between stars and suns can be determined with mathematical accuracy; the ocean's depth can be sounded; the cost of an ocean steamer circumnavigating the globe can be estimated; the thousands of tons of coal in the hills can be figured; the crops on a million acres can be forecast, but who is there that can determine, sound, approximate, figure or forecast the results of a financial undertaking in drilling a wildcat well at a cost of from $25,000 to $200,000.

"How many of you men have gone out in the morning with steps full of spring and hearts joyous to see the drill go through the caprock and touch the 'liquid gold,' only to return at evening with hanging head and lips closed in silence because half of your fortune was ventured in the futile effort? How many of you have seen your friends accumulate a nice little sum sufficient for old age and then lose it in what they thought a sure thing? But once you have had the 'golden touch' the hazard continues. You begin at once to deplete and remove your property and you cannot forecast the day or the year when your work is completed. Today your market is good, tomorrow it is shot to pieces, but the lifting costs remain the same.

"Organization and cooperation are the means of diffusing the facts of the industry. The greatest factor of success in the industry has been and will be the interchange of information gained from the daily operations and experiences of the industry. It is this necessity that has practically barred trade secrets from the industry.

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Group Sessions Feature A.P.I. Program

All Phases of Petroleum Industry Covered in Schedule of Meetings To Be Held in Los Angeles Next Month

The American Petroleum Institute makes the following preliminary announcement regarding the program for its sixth annual meeting, to be held at the Biltmore Hotel, Los Angeles, Cal., January 19, 20, and 21, 1926.

Monday, January 18

On Monday, January 18, 1926, the day prior to the convening of the sixth annual meeting, the following named committees will meet at the time fixed by the chairmen of each committee in his notice to the members:

Committee on Public Relations.

Committee on Fire Prevention.

Committee on Uniform Accounting.

Special Committee on Method of Testing Vapor Pressure.

General Committee on Railroad Transportation and its subcommittees.

Committee D-2 (A.S.T.M.) on Petroleum Products and Lubricants.

Committee on Standardization of Specifications for Steel and Iron Pipe for Oil Country Tubular Goods.

Committee on Standardization of Rig Irons.

Committee on Standardization of Wire Rope and Manila Cordage.

Committee on Standardization of Standard Rigs and Derricks.

Committee on Standardization of Cable Drilling Tool Joints.

Committee on Standardization of Pumping Equipment and Engines as Applied to the Production of Oil.

Committee on Standardization of Rotary Drilling Equipment.

Committee on Standardization of Belting.

Committee on Standardization of Oil Field Boilers.

Committee on Standardization of Steel Storage and Production of Oil.

Evening

8:00 p. m. The California Committee on Reception and Entertainment is arranging to give an informal reception and smoker in the foyer of the ball room at the Biltmore Hotel.

Tudesday, January 19; Morning

10:30 a. m. Meeting of the Board of Councillors. (To nominate candidates for election as members of the Board of Directors.)

Afternoon

2:30 p. m. General session. "Welcome to California." Thomas A. O'Donnell, California Petroleum Corp. The president's address, J. Edgar Pew. Address, Paul Shoup, Southern Pacific Co. Report of Board of Councillors and election of directors.

Evening

8:00 p. m. General session. Memorial service for the late Alfred C. Bedford. Address: Mark L. Requa.

Wednesday, January, 20; Morning

Note: There will be no general session on Wednesday. The morning and afternoon will be devoted to group sessions, arranged by general topics, at which the various subjects will first be treated in addresses by selected speakers. After each speaker has finished, opportunity will be given for general discussion of the subject.

10:30 a. m. Meeting Board of Directors. (Luncheon for members of the board at noon.)

10:00 a. m. Group meetings. Group 1—General topic: Standardization of Oil Field Equipment. "Standardization of Belting." Committee report: A. H. Riney, national chairman. "Standardization of Oil Field Boilers." Committee report: A. B. Steen, national chairman. "Standardization of Cable Drilling Tool Joints." Committee report: Thomas Fleming, Jr., national chairman. "Standardization of Standard Rigs and Derricks." Committee report: W. W. Fondren, national chairman. "Standardization of Steel and Iron Pipe for Oil Country Tubular Goods." Committee report: J. Edgar Pew, national chairman.

Group 2—General topic: Motor Fuel and Motor Lubrication. "A New Gasoline Test Method," W. S. James, Associated Oil Co. "Effects of Fuel and Engine Design on Starting," H. C. Dickinson, United States Bureau of Standards. "Anti-Knock Gasolines and the High Compression Engine," A. L. Clayden, Sun Oil Co. "Purchase of Lubricants on a Quality Basis," H. C. Dickinson, United States Bureau of Standards.

Group 3—General topic: Uniform Methods of Oil Accounting." Committee report: M. W. Mattison, chairman "The General Balance Sheet," general discussion.

Group 4—General topic: Natural Gasoline. (Note: This is a joint session between members of the Institute and the Association of Natural Gasoline Manufacturers. The program has been arranged by the latter named organization.) Presiding: Harry J. Bauer, Pacific Gasoline Co., "Natural Gasoline—Its Present Position and Future Outlook," E. L. Peck, president, Association of Natural Gasoline Manufacturers. Discussion led by A. M. Ballard, Sun Oil Co. "What Is Good Natural Gasoline From the Standpoint of the Refiner?" (Speaker to be announced.) Discussion led by R. E. Bering, California Gasoline Corp.

Afternoon

2:00 p. m. Group meetings. Group 1—General topic: Standardization of Oil Field Equipment. "Standardization of Rig Irons." Committee report: H. J. Lockhart, national chairman. "Standardization of Rotary Drilling Equipment." Committee report: Captain J. F. Lucey, national chairman. "Standardization of Wire Rope and Manila Cordage." Committee report: C. C. Sharpenberg, national chairman. "Standardization of Pumping Equipment and Engines." Committee report: A. V. Hoenig, national chairman. "Standardization of Steel Storage and Production Tanks." Committee report: G. M. Vandaveer, national chairman.

Group 2—General topic: Fire Prevention and Protection in the Petroleum Industry. "Protection Against Static in Petroleum Marketing," J. A. Watterson, Standard Oil Co. (Ohio.) "Steam Protection for Oil Tanks," G. O. Wilson, Standard Oil Co. (California). "Fire Prevention and Protection in the Petroleum Industry," G. H. Haupt, Standard Oil Co. (New Jersey).

Group 3—General Topic: Uniform Methods of Oil Accounting. "The General Balance Sheet." Discussion continued.

Group 4—General topic: Natural Gasoline. (Note: This is a joint session between members of the Institute and the Association of Natural Gasoline Manufacturers. The program has been arranged by the latter named organization.) Presiding: Harry J. Bauer, Pacific Gasoline Co. "Methods of Manufacture, Past and Present," F. E. Rice, Phillips Petroleum Co. Discussion led by S. B. Mosier, Signal Gasoline Co. of California. Subject to be announced: D. E. Buchanan, Chestnut & Smith Corp. Discussion led by: F. S. Wade, Lomita Gasoline Co. of California.

Thursday, January 21; Morning

(Note: The morning and afternoon on this day will be devoted to group sessions, arranged by general topics, at which the various subjects will first be treated in addresses by selected speakers. After each speaker has finished, opportunity will be given for general discussion of the subject. The annual dinner will be at 8 o'clock in the evening.)

10:30 a. m. Meeting of Board of Directors. (Luncheon for members of the board at noon.)

10:00 a. m. Group meetings. Group 1—General topic: Improvement of Oil Drilling and Production Methods and Equipment. "The Trend of Electrification in the Petroleum Industry," H. E. Dralle, Westinghouse Electric & Manufacturing Co. "The Hild Electric Drive," Thomas Fleming, Jr., Oil Well Supply Co. "Use of Electric Power from the Oil Operator's Point of View," L. B. Riddle, Shaffer Oil & Refining Co. "Oil and Gas Engines," Pat Shouvlin, Superior Gas Engine Co.

Group 2—General topic: Oil As Fuel. "Domestic Oil Burning," J. C. Johnson, S. T. Johnson Co. "Status of the Oil Burner in the Heating Industry," Homer Linn, American Radiator Co. "Oil Burning on the Pacific Coast," J. B. Arthur, Union Oil Co. "Oil as Fuel for Electric Transportation," J. C. Thirlwall, General Electric Co.

Group 3—General topic: Uniform Methods for Oil Accounting. Presentation of prepared papers on Chart of Accounts for: Production Department, Casinghead Gas Department, Refinery Department, Sales (Marketing) Department. General discussion.

Group 4—General topic: Oil Transportation by Railroad. "Seeking Safety in Railroad Transportation," Colonel B. W. Dunn, Bureau of Explosives. A Bureau of Explosives educational moving picture film will be shown. "The Oil Freight Rate Situation," Fayette B. Dow.

Afternoon

2:00 p. m. Group 1—General topic: California Production Engineering Symposium. (Note: This is a joint session between the Standardization Division of the Institute and the Petroleum Division and the California sections of the American Institute of Mining and Metallurgical Engineers. The program has been arranged by representatives of the latter named organization.) "Deep Drilling Practices," R. H. Garrison, E. J. Miley Co. "Improvements in Production Methods," (speaker to be announced.) Discussion: "Economic Effect," (leader to be announced.) "Gas Lift," led by R. P. McLaughlin. "Influence of Submergence on the Efficiency of the Oil Well Plunger Pump," L. C. Uren, University of California, assisted by S. B. Sargent and V. J. Collins.

Group 2—General topic: Special Products from Petroleum. "Experimental Studies in the Use of Petroleum Oils as Insecticides for Citrus and Deciduous Trees," E. R. deOng, University of California. "Special Use of Petroleum Products," J. B. Terry, Standard Oil Co. (California.) "Organic Chemicals From Still-Gases," (speaker to be announced.)

Group 3—General topic: Methods of Credits and Collections. "Extending Credit," F. H. Bowman, Pure Oil Co. "Methods of Collection," (speaker to be announced). "Functions of Credit Interchange Bureaus," (speaker to be announced.)

Group 4—General topic: The Relations Between the Oil Industry and the Public. "An Outsider Looks in at the Petroleum Industry," Judson C. Welliver, Public Relations Committee. "Getting the Public to See the Industry as it Really Is," (speaker to be announced.) "Cooperative Work to Establish an Understanding With the Public," (speaker to be announced).

Evening

8:00 p. m. Annual dinner. There will be no speeches at the annual dinner. The program is being arranged by the special committee of Californians. Reservations for the annual dinner should be made promptly. The price is $6 per plate. The program committee regrets very much that on account of the limitation of seating capacity, attendance must of necessity be restricted to men only.

Entertainment

A California executive committee on Reception and Entertainment is arranging a program of entertainment in connection with the sixth annual meeting. Under its auspices:

An informal reception and smoker will be given at 8 o'clock, Monday evening, January 18, in the ball room foyer of the Biltmore Hotel.

The Chamber of Mines and Oil will appoint a general reception committee.

A ladies reception committee has been appointed.

On Friday, January 22, 1926, beginning at 9:30 o'clock a. m. and ending about 4:30 o'clock p. m., visiting members will be given an automobile trip to the southern California oil fields. The route will be as follows:

Section A: Inglewood, El Segundo, Torrance, Watson, Long Beach, (stop for luncheon), Signal Hill, Santa Fe Springs, thence via Northam to Coyote Hills, property of Standard Oil Co., Montebello and return.

Section B: Montebello, thence via Whittier to Coyote Hills, property of Standard Oil Co., thence via Northam to Santa Fe Springs, Signal Hill, Long Beach, (stop for luncheon), Watson, Torrance, El Segundo, Inglewood and return.

A golf tournament will be held, under the direction of a special committee, on Friday, January 22, 1926. Transportation to the golf club and luncheon for the participants will be provided.

The committee is making arrangements for a dance in the ballroom of the Biltmore Hotel, 9 to 12 o'clock p. m., Friday, January 22, 1926.

Hotel Accommodations

It is suggested to those who plan to attend the sixth annual meeting of the Institute to be held at Los Angeles, January 19, 20, 21, 1926, that they reserve accommodations directly with the desired hotel at the earliest date possible. The

(Continued on Page 125)

COMMITTEE OF ELEVEN MAY REPORT AT CONVENTION IN LOS ANGELES

NEW YORK, Dec. 15.—The Committee of Eleven of the American Petroleum Institute, which recently was authorized by the Institute directors to continue its study of the subject of conservation, will doubtless be ready to make a preliminary report to the directors at the Los Angeles meeting of the Institute in the middle of January. Following the recent action of the board approving the committee's report and instructing the committee to make the further study requested in a letter from Secretary of the Interior Work, who is chairman of the Federal Oil Conservation Board, the committee held meetings in New York and got its new work under way.

It was the plan for the committee to proceed to Washington and to hold conferences with the Federal Oil Conservation Board prior to starting on the supplemental or new report but because of the pressure of duties of the cabinet officers who make up the Federal board, in connection with the convening of Congress and the approach of the holidays these conferences could not be arranged. The Institute board asked the Committee of Eleven to report back at the earliest possible date.

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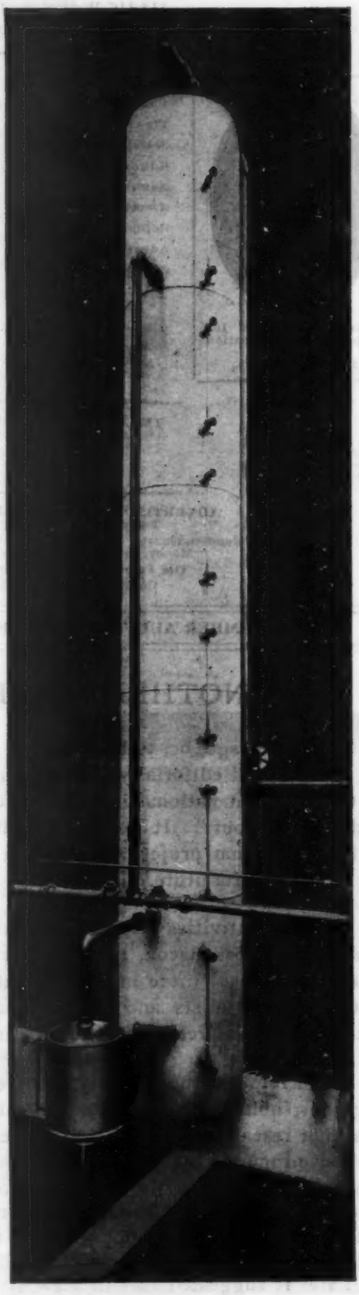

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ANOTHER ACHIEVEMENT

Two years ago, or, to be exact, on December 27, 1923, The Oil and Gas Journal editorially urged upon the attention of the industry that "a great national institution for petroleum research is the need of the hour." It concluded with the suggestion that the realization of that project "lies within the province of the American Petroleum Institute."

Research activities in other industries were cited and the words of Raymond Foss Bacon, former director of the Mellon Institute, were quoted that "there must be greater cooperation between petroleum industrialists and universities and scientific societies if desirable, fruitful research is to be stimulated."

Declaring that the industry is in need of a great central bureau to gather, hold and distribute valuable scientific and mechanical data, that research, ceaseless and universal, was necessary and that research promoted by limited motives of interest to but one group or section, is necessarily limited in operation, The Oil and Gas Journal invited consideration of the creation of a National Institute of Petroleum Research, supported by the industry generally.

Later it suggested that in view of the interest in research displayed by John D. Rockefeller in the foundation of the Rockefeller Institute his attention might be invited to the need for specializing in petroleum problems.

The announcement of last week that Mr. Rockefeller had donated $250,000 through the American Petroleum Institute for research in petroleum was a gratifying realization of the suggestion launched in these columns two years before.

Within that period there have been many developments which have emphasized the practical wisdom of the original proposal. The application of science in both the producing and refining ends of the industry has been wonderfully advanced in the past year or two.

Perhaps the most striking effect has been the realization that the increasing efficiency in refining has actually progressed to a stage where synthetic gasoline is declared to be superior to the straight run.

That is one startling result of scientific research in petroleum. And the best qualified students of the subject admit that we are only on the verge of discovery in obtaining the fullest recovery of energy from oil.

Side by side with this goes the repeated announcement from the experts in the automobile industry that when the oil industry is ready to supply nation-wide distribution of the proper fuel improved motors can be turned out that will amazingly increase our mileage.

Simultaneously we are informed that the cracked product is proving to be an approach to that fuel, having the anti-knock qualities declared to be essential to obtaining greater power.

In the field of production there has been constant effort to profit by the trial and adoption of more scientific methods of oil finding and recovery. Manufacturers of equipment are ceaselessly endeavoring to produce more efficient tools and supplies by research in material and technical perfection.

The great impetus given by the coal strike to the popular interest in the use of oil for house heating has stimulated scientific study of the heating values of various burning oils and burner manufacturers and oil companies are displaying a common desire to reach an efficient conclusion.

The development of the Diesel engine is recognized as still in its initial stage. The oil industry has an immediate interest in that evolution which promises to produce vastly greater energy from oil than has yet been practicable by existing methods.

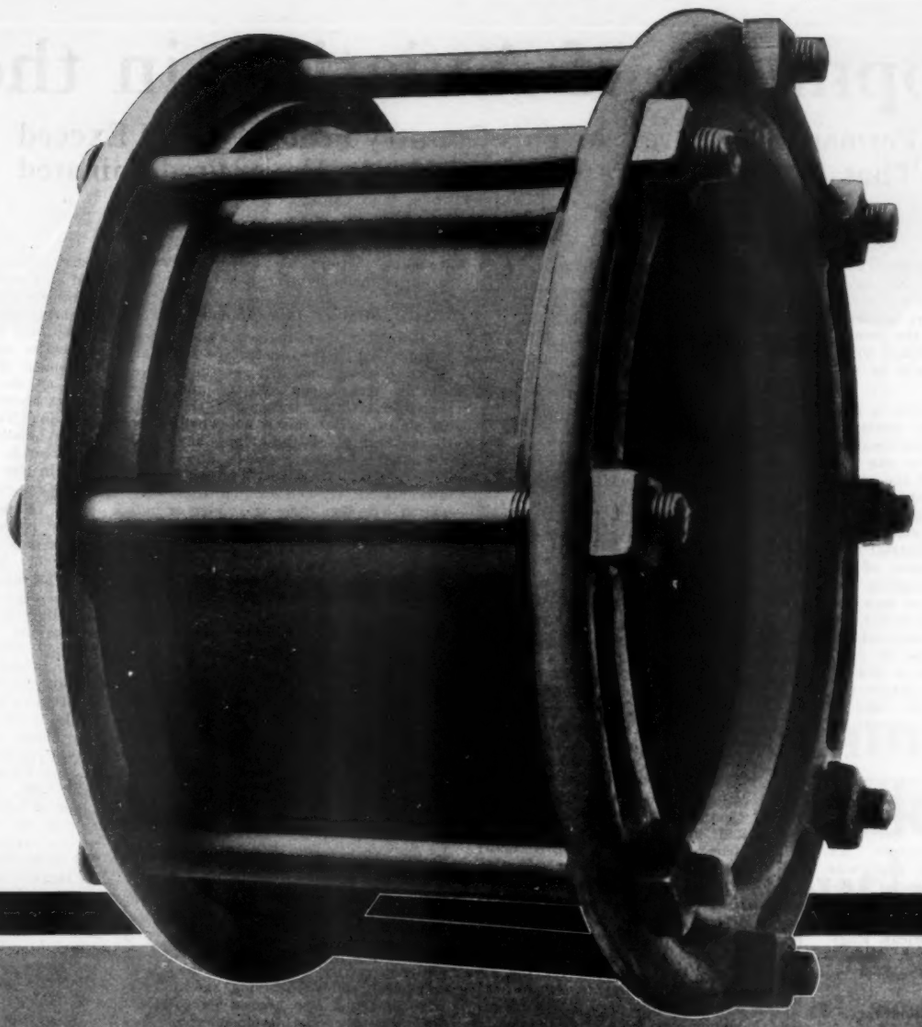
Looking back over the miracles that have been accomplished by the oil industry since the days when oil was only kerosene and contrasting the varied products and uses of today made possible by the application of scientific principles discovered by research, who is bold enough to say that we are anywhere near the climax of our knowledge of the properties of petroleum?

What has been learned has been attained by individual study and experience or by the initiative of the companies which have been sufficiently enterprising to maintain research departments of their own. How much greater might the results have been had this research and study been fostered on the larger scale suggested by Mr. Rockefeller's gift?

Research promoted in the interest of a single interest must, by the nature of things, as The Oil and Gas Journal said two years ago, be necessarily limited. It will in most cases be confined to what promises practical and profitable results, yet just beyond there may be immensely greater possibilities awaiting the research into the fundamental.

The program of research launched by Mr. Rockefeller's donation is intended particularly to stimulate investigation into the broader phases of petroleum physics, chemistry and geology, phases that, offering no immediate hope of practical gain, must be left for the devotee of pure science to whom we owe most of the great revelations of the secrets of nature.

That was the conception of The Oil and Gas Journal in offering the original suggestion. Its approval by Mr. Rockefeller and the American Petroleum Institute in this concrete form puts it squarely before the industry for support. That $250,000 was not the end, but just the beginning of what should ultimately become an institute of research which will benefit the whole industry and the world in prolonging and enlarging our use of that gift of Nature which has inestimably lightened the labor of mankind, given us a wider horizon of life and added immeasurably to the zest of living.



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Development of Aviation in the U. S.

Permanent Progress in This Country Probably Will Exceed That Abroad Where Military Needs Have Predominated

By L. M. Fanning

While it is generally conceded that aviation in foreign countries has made greater headway since the World War than in this country, there are elements which definitely indicate that the greater and more permanently established progress in the next few years will be recorded in the United States.

The awakening in this country is now evidenced on every hand; the public is being treated to aviation information daily and is fully aroused to the importance of the subject. With the enactment of a civil aeronautic law by the present Congress practically assured, together with a definite Government program concerning civil and industrial uses of aircraft and the cooperation of all Government agencies to strengthen the aircraft industry, progress that may approach the sensational is possible, in view of what has already transpired.

The tendency of those close to commercial aviation development is toward conservatism in talking of the future, but the reservation is made, in the light of what has taken place in this country in the automobile field, that anything can happen.

Some of the principal agencies working on the aviation problems of this country at the present time are President Coolidge's Aircraft Board and Secretary Hoover's Department of Commerce. An important event in the last year was the investigation into commercial aviation made by the Committee of Civil Aviation of the United States Department of Commerce and American Engineering Council, of which J. Walter Drake, assistant secretary of commerce, is chairman.

Report on Civil Aviation

The report of this committee brought out that while civil aviation lacks legal status and control in this country, interest in the commercial aspects of aviation is world wide, keen and growing, the greatest development having been in Europe. The European nations as far back as 1919 undertook to promote civil aviation by the enactment of basic air laws, providing, through control and regulation, for the protection of the public, for the establishment of special Government departments or bureaus, for the payment of cash subsidies, and for the provision of navigational aids such as are everywhere given to water transportation. In aviation these aids include the establishment and maintenance of airways, fields, night flying beacons, radio, map and weather services. Without exception, Great Britain, France, Germany, Italy, Belgium, Netherlands, Denmark, Sweden and Russia have sought to place civil aviation on a permanent basis.

European countries have given other recognition to civil aviation. Important commercial aviation companies in Europe receive direct Government subsidies and other aid. Direct subsidies have been considered necessary in Europe because of unusual post-war conditions or because of specific military obligations imposed on the operators. The amount of direct aid, however, has not been large in the aggregate. The total subsidies of England, France and Holland for 1924 at the present rate of exchange, according to the committee's report, amounted to only $3,000,000, but they have been an important aid in commercial development. For the five years, 1920-1924, inclusive, the total world operation of aircraft on schedule service over regular routes, amounted to:

Pounds of goods carried	10,657,109
Pounds of mail carried	8,718,665
Passengers carried	173,564
Mails flown, distributed as follows	25,387,267
By landplanes	92%
By seaplanes	8%
By lighter than air craft	..%

Growth In Europe

The following condensation of data more fully dealt with in the European section of the Committee on Civil Aviation discloses significant growth:

In Europe—	1920	Recent 1924	Increase
No. of transport companies	20	16	.....
Length, in miles of regularly operated routes	6,000	15,270	155
No. miles flown over regular routes	1,234,357	5,927,356	380
No. of pounds of mail carried	41,056	1,305,820	3,080
No. of pounds of express carried	482,230	3,802,241	650
No. of passengers carried	9,221	63,706	590

No European air transportation company is self-supporting, though the proportion of earned income is rising rapidly on skillfully operated lines, the development or air transportation on a sound basis in Europe is seriously handicapped by political complications. Night air mail traffic to North Africa has not developed as anticipated. Night flying is not as far advanced in Europe as in the United States Air Mail Service.

According to the Aeronautical Chamber of Commerce the difference between the United States and such countries as Great Britain, France, Italy, Germany and Japan, with the possible exception of Great Britain, is that the approach to aviation abroad is primarily military and secondarily commercial; whereas, in the United States it is primarily commercial and secondarily military. The military urge is responsible for the apparent prosperity of air transport abroad. The lack of military urge is responsible for the apparent delay in establishing air transport in this country. But of the two positions, according to this organization, that of the United States will prove eventually to be the better, providing there is no further procrastination in the enactment of a national air policy.

Military Idea Abroad

"It is true that, to look at a map of Europe, with the operating air lines shown thereon, one will get the impression of tremendous activity and prosperity in civil air transport," the chamber states. "But this is not wholly true. In the first place, these lines have been projected by military minds, and always with military objectives in view. Second, international problems which are always invited wherever there is a tinge of military policy, tend to deprive these lines of the economic support and usefulness which they would otherwise enjoy. Finally, this condition would require the payment of subsidies, even if there had been an attempt to avoid artificial stimulus.

"Thus, in Europe, we find air lines heavily subsidized and enjoying, in addition, the operation of regulation and inspection through air law, the use of public terminals, beacons, communications and frequent weather information so essential to aerial navigation in its present stage of development. In addition to Great Britain, France, Italy and Germany, this situation is found, to a greater or less degree, in Argentina, Australia, Austria, Canada, Colombia, Czecho-Slovakia, Finland, India, Japan, the Netherlands, Norway, Soviet Russia, Spain and Switzerland."

The important investigation of the Coolidge Aircraft Board, of which Dwight W. Morrow is chairman, has recently resulted in a comprehensive report which, while primarily concerned with a governmental policy involving the military establishments, also necessarily goes into the question of the development of commercial aviation in this country. The board recommends a policy of aircraft production, largely through the encouragement of private manufacturers. The board rejects the proposal for the creation of a unified Government air service. It rejects also the plan of amalgamating the army and the navy in a department of national defense with an air branch. It makes recommendations for the improvement of the Government air service, such as the creation of additional assistant secretaryships in the Department of War, Navy and Commerce for the better handling of airship problems and the creation of a bureau of air navigation in the Department of Commerce under an additional assistant secretary.

Extend Air Mail Service

The board recommends the progressive extension of the air mail service, preferably by contract, and also that steps be taken to meet the manifest need for airways and air navigation facilities, including an adequate weather service maintained by public authority and planned with special reference to the needs of air commerce. The board describes the strides made in commercial aviation as follows:

"Both here and abroad, great strides have been made in the commercial use of the airplane in the last four years. In the United States, during the fiscal year 1925, the air mail flew a total distance of 2,501,555 miles, and it is unique among the world's air lines that much of its regular flying is done at night. While no single European country shows as large a total as that for civilian operation, the total for all of Europe during 1924 is almost exactly 6,000,000 miles, with 64,000 passengers and 2,500 tons of mail and express carried.

"There has been no more inspiring chapter in American enterprise and courage than the establishment and conduct of the United States air mail. As early as 1918 the Postoffice Department initiated the air mail with a route from New York to Washington. The saving in the time was not sufficient to justify the continuance of the route. Other short routes were tried and abandoned for the same reason. Since July 1, 1924, the air mail has been operating a through service from New York to San Francisco. Since July 1, 1925, there has been in operation an additional service by night between New York and Chicago.

Route Well Lighted

"There is now a lighted airway from New York to Rock Springs, Wyo. The Postoffice Department owns 96 airplanes, of which 61 are equipped for night flying. Beacon lights guide the night pilot along the routes. In addition to the regular fields there are emergency landing fields and a system of revolving lights with red danger signals which enable the ground operator to signal to the pilot regarding weather conditions. The Postoffice Air Mail Service has grown from 21,389 miles flown in the fiscal year ending June 30, 1918, to 2,501,555 miles flown in the fiscal year ending June 30, 1925.

"The total miles flown since the establishment of the air mail amounts, to the end of the last fiscal year, to 10,526,532 miles. The service is not free from danger, but owing to the regularity of the route and the rigid inspection of the airplanes there has been a gratifying decrease in accidents.

"In addition to the air mail service there has been in this country some further development in the use of aircraft for civil purposes, such as crop dusting, aerial photography, forest patrol, timber cruising and private operation for personal transport.

"As common carriers, however, aircraft have not been used as much in this

(Continued on Page 126)

DRILLER TURNED KITE MAKER BUT WIND WAS IN THE WRONG QUARTER

By J. L. Dwyer

This is a little incident which happened in the life of a young oil field worker, a boy who came of poor but Irish parents.

Taken at its best, the life of the oil field worker is not a very voluptuous one. The element of relativity enters into his scheme of things, for in order that the population may travel in the famous hardware of Detroit on their Sunday excursions to the land of poison ivy, the oil field worker must live an exceedingly rustic life in its rustiest form.

His is an existence far removed from the swish of silken ankles, and the only swishing sound that might assail his ears is the swishing of a tail given by some irate cow's husband as it prepares to charge the driller or toolie in retaliation for the invasion performed by the drilling crew who are intent upon drilling a hole in that section of the prairie that was formerly the northeast corner of the annoyed animal's sleeping porch. It's a hard life that the driller leads any way that you look at it, and at the expiration of his sojourn in the fields, when once more he treads pavements and blinks at the bright lights, what more natural than that he should indulge himself in a bit of relaxation.

When the members of a drilling crew have returned to town after six or eight weeks in the field, their reactions are similar to a spring that has broken the cord which held it in check. They are not wild, but neither do their actions conform to that delicate and exacting standard represented by the magazine advertisements which perpetually inquire, "Should she have asked him in?" Their actions are inclined to be a bit playful in the manner of the character in the work of the late Richard Harding Davis. Davis told a story about an Englishman and an American in China. They had been out in the tall timbers a long time and just returned to town. Said the Englishman, "Let's have a bit of fun; let's tease the jolly barmaids." To which the Yank replied, "Lord, no; let's whip the police force." So on with the story, and if you're caught yawning, you have to quit.

Near the little town of Blanktown in the Oklahoma oil fields, the members of a drilling crew had just "finished up." En route to town they had acquired a jug of the beverage which has brought international publicity to Mr. Volstead, and there they were. Four months' pay in their pockets and not a care in the world excepting the limitations of the rural village of Blanktown. Their vigorous natures yearned for a better stage of operations but fate had decreed other-

(Continued on Page 126)

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North-Central Texas Field

By George R. Kelley

Of 133 new locations, few are in wildcat territory, only 21 in the nine wildcat counties. Week records 101 new completions, 10 being in Cross Plains townsite Pool, with 610 bbls. flush production. New production 4,820 bbls. less. Three wells in Wilbarger showing for good producers.

FORT WORTH, Tex., Dec. 14.—If the number of new locations can be regarded as a barometer of what is to be expected in the way of development in the North and Central Texas oil area, then there will really be something doing in this territory during the next month or two. During the week just closed there was a total of 133 new locations made in the North Texas area.

Contrary to what might have been expected a survey shows that only a small percentage of these new locations are in wildcat territory. To be exact, only nine counties in what is generally regarded as wildcat territory in this area figure in the new locations at all, and only 21 locations were made in these nine counties.

Nearly a third of the new locations were in Archer County alone and in the four counties immediately in the Wichita Falls territory there was a total of 93 new locations. There were 40 locations in Archer County, 20 in Wichita County, 18 in Young County and 15 in Wilbarger County. Eight new locations were made in Reagan County, all by the Big Lake Oil Co. in the Big Lake Field on University of Texas land. Other counties where new locations were reported and the number in each follows:

Brown County, 6; Shackelford County, 5; Mitchell County, 4; Eastland County, 3; Coleman County, 3; Upton County, 3; Stephens County, 2; Hutchinson County, 2, and one each in Clay, Throckmorton, Stonewall and Scurry Counties.

The fact that a very large percentage of the locations reported are in proven and semi-proven territory is generally regarded as an indication that the operators prefer to go after the oil in the proven districts, even though there the reward may be small, rather than to go out and wildcat for it. Many of the new locations in south Archer, north Young and Wilbarger Counties are in territory that is absolutely proven, though a big flush production is not to be expected.

The week also ranks very high in the number of new wells completed. A total of 101 new completions is reported for the week, compared with a total the previous week of only 84. As might be expected the Wichita Falls area also led in this respect and Archer County was slightly ahead of Wilbarger in number of completions. Archer County reported 25 completions, Wilbarger County, 23; Young, 15, and Wichita County, 12. Neither Stephens nor Reagan Counties reported any completions. There was one in Eastland County, 4 in Brown and 21 in the wildcat districts, 10 of these being in Callahan County.

Callahan County made another exceptionally good record. All of the 10 completions were in the Cross Plains Townsite Pool, every one registering production of from 10 to 100 bbls. The 10 new wells had a flush production of 610 bbls.

New Production Less

New production was far short of that reported last week. New output is 6,480 bbls., against 11,300 bbls. last week. Wilbarger County reported the largest new production, 3,940 bbls. daily from 17 new producers or an average per well of a little more than 230 bbls.

The following table of completions gives the new wells by districts:

District—	Comp.	Prod.	Dry	Gas	New Prod.
Wichita	12	7	5	0	250
Wilbarger	23	17	6	0	3,940
Archer	25	13	12	0	995
Young	15	5	10	0	380
Eastland	1	0	0	1	*
Brown	4	4	0	0	185
Wildcats	21	11	9	1	*730
Total	101	57	42	2	6,480
Last week's total	84	49	31	4	11,300
Difference	17	8	11	2	4,820

*Eastland County reported one gas well making 6,000,000 feet of gas and the wildcat districts reported one gas well making 26,000,000 feet of gas daily.

A Brown County wildcat test is showing with some promise of a small producer. It is Hart and associates' No. 1 Brooks, about 2 miles west of the town of Bangs. It is a rank wildcat which encountered a sand at 1,156 feet and developed an interesting showing of both oil and gas with also some water showing.

There are three new wells in Wilbarger County which have not been completed, but which are showing for good producers. Bridwell and others' No. 12 Stephens is in the saturated lime from 2,360-2,405 feet and is estimated to be making 200 bbls., flowing and swabbing. The Humble Oil & Refining Co.'s No. 3-H Waggoner is flowing by heads and making 250 bbls. daily from the sand at 1,858 to 1,867 feet and its No. 1-I Waggoner is flowing by heads and making 275 bbls. from sand at 1,886 to 1,894 feet. Operations are at a standstill at this well while the rig which was destroyed by fire is being rebuilt.

In the Campbell Pool, in northeastern Young County, Camp Oil & Gas Co.'s No. 1 Campbell is estimated good for 30 bbls. uncompleted with the drill 10 feet in the pay sand topped at 904 feet. The Tidal Oil Co.'s No. 9 Campbell, in the same pool, is swabbing at the rate of 300 bbls. daily from sand at 902 to 926 feet. Christie and others' No. 2-B Keathley, also in Young County, is estimated to be good for 40 bbls. from sand at 976 to 980 feet.

The two highly interesting wildcat tests in Upton County, the Republic Production Co.'s No. 1 Baker and the Kirby Petroleum Co.'s No. 1 Union Land Co. are both still unknown quantities. The Baker well has plugged off the water and is bailing to test the plug. If this holds the well will in all probability be shot in the lime above. The Kirby well has attained a total depth of 2,212 feet and is reported about 142 feet in the lime with no showing of oil encountered so far.

In Stephens County, Edison and others' No. 1 Post is a small producer in the semi-shallow sand at 1,825-860 feet. It is making about 50 bbls. of oil and 3,500,000 feet of gas at this depth.

The Cuervo Oil Syndicate, Henry Livingstone and associates, has completed its No. 2 Ming heirs as a 50,000,000-foot gas well in the Lake sand at 3,440-50 feet. This is the second gasser for this company in this area, south of the town of Wayland in Stephens County. This gas pool is 2½ miles northwest of the Barney Carter Pool, which produced in a rather prolific manner for a few months last summer.

In this same area the Texas Pacific Coal & Oil Co.'s No. 3 Hand is an oil well, making 125 bbls. from the Ranger sand at below 3,730 feet.

PRODUCTION REPORT
Week Ending December 10, 1925

Burkburnett

Gulf Production Co.	500	
Humble Oil & Refining Co.	365	
Magnolia Petroleum Co.	3,020	
Panhandle Refining Co.	265	
Prairie Oil & Gas Co.	20	
Sinclair Oil & Gas Co.	50	
Sun Oil Co.	75	
The Texas Co.	425	
Texhoma Oil & Refining Co.	515	
Miscellaneous	7,890	
Total		13,125

Electra

Empire Gas & Fuel Co.	965	
Gulf Production Co.	830	
Humble Oil & Refining Co.	140	
Magnolia Petroleum Co.	3,670	
Panhandle Refining Co.	50	
Prairie Oil & Gas Co.	140	
The Texas Co.	3,495	
Texhoma Oil & Refining Co.	1,660	
Miscellaneous	6,100	
Total		17,050

Wilbarger County

Gulf Production Co.	40	
Humble Oil & Refining Co.	4,505	
Prairie Oil & Gas Co.	50	
Miscellaneous	11,375	
Total		15,970

Iowa Park

Gulf Production Co.	40	
Humble Oil & Refining Co.	270	
Magnolia Petroleum Co.	600	
Panhandle Refining Co.	35	
The Texas Co.	445	
Texhoma Oil & Refining Co.	40	
Miscellaneous	3,990	
Total		5,420

Archer County

Empire Gas & Fuel Co.	960	
Gulf Production Co.	2,395	
Humble Oil & Refining Co.	430	
Magnolia Petroleum Co.	1,665	
Panhandle Refining Co.	170	
Prairie Oil & Gas Co.	3,000	
Sun Oil Co.	415	
The Texas Co.	2,300	
Texhoma Oil & Refining Co.	2,200	
Miscellaneous	19,820	
Total		33,955

Stephens County

Empire Gas & Fuel Co.	40	
Gulf Production Co.	1,425	
Humble Oil & Refining Co.	730	
Magnolia Petroleum Co.	420	
Mid-Kansas Oil & Gas Co.	1,510	
Prairie Oil & Gas Co.	890	
Sinclair Oil & Gas Co.	70	
Sun Oil Co.	200	
The Texas Co.	1,265	
Texas Pacific Coal & Oil Co.	1,290	
Miscellaneous	6,455	
Total		14,295

Ranger

Gulf Production Co.	260	
Humble Oil & Refining Co.	40	
Magnolia Petroleum Co.	630	
Mid-Kansas Oil & Gas Co.	160	
Panhandle Refining Co.	130	
Prairie Oil & Gas Co.	680	
Sinclair Oil & Gas Co.	350	
The Texas Co.	155	
Texas Pacific Coal & Oil Co.	825	
Miscellaneous	2,755	
Total		5,985

Moran

Empire Gas & Fuel Co.	30	
Humble Oil & Refining Co.	10	
Prairie Oil & Gas Co.	15	
The Texas Co.	360	
Texhoma Oil & Refining Co.	85	
Miscellaneous	1,970	
Total		2,470

Young County

Gulf Production Co.	225	
Humble Oil & Refining Co.	515	
Magnolia Petroleum Co.	290	
Panhandle Refining Co.	145	
Prairie Oil & Gas Co.	10	
Sinclair Oil & Gas Co.	375	
Sun Oil Co.	60	
The Texas Co.	640	
Texhoma Oil & Refining Co.	855	
Miscellaneous	6,815	
Total		9,930

Eastland-Comanche

Empire Gas & Fuel Co.	10	
Humble Oil & Refining Co.	150	
Magnolia Petroleum Co.	830	
Mid-Kansas Oil & Gas Co.	165	
Prairie Oil & Gas Co.	120	
Sinclair Oil & Gas Co.	25	
The Texas Co.	150	
Texas Pacific Coal & Oil Co.	115	
Miscellaneous	1,640	
Total		3,205

Panhandle

Carson	3,045	
Hutchinson	3,125	
Gray	60	
Wheeler	30	
Potter	20	
Total		4,280

Miscellaneous Pools

Clay	380	
Montague	750	
Jack	20	
Throckmorton	260	
Baylor	310	
Palo Pinto	505	
Brown	3,310	
Coleman	295	
Callahan	5,505	
Mitchell	2,870	
Reagan	31,490	
Scurry	60	
Crockett	45	
Total		44,800
Total this week		170,485
Total last week		170 240
Gain		245

Wichita County—Completions

Fisher and others' No. 2 Birk, 20 bbls. at 1,303 feet; Patterson and others' No. 1 Lowrance, dry at 2,336 feet; Texhoma Oil & Refining Co.'s No. 1 Bentley, dry at 1,045 feet; Biggs Oil Co.'s No. 11 Fisher, dry at 2,006 feet; Empire Fuel & Gas Co.'s No. 15 Pierce, 55 bbls. at 1,498 feet; K-M-A Oil Co.'s No. 22 Munger, 30 bbls. at 1,235 feet; Ryan Petroleum Co.'s No. 46 Nance, 30 bbls. at 498 feet; No. 47 Nance, 20 bbls. at 500 feet; Texhoma Oil & Refining Co.'s No. 3-L Burnett, dry at 1,934 feet; No. 9 Waggoner Brothers, 50 bbls. at 1,756 feet; No. 10 Waggoner Brothers, 75 bbls. at 1,755 feet; Wolfe and others' No. 2 Daume, dry at 1,836 feet.

Wilbarger County

Barkley and others' No. 7-A Stephens, 600 bbls. at 2,360 feet; Beatty and others' No. 1 Waggoner, 20 bbls. at 1,954 feet; Dyson and others' No. 1 Waggoner, 30 bbls. at 2,438 feet; Humble Oil & Refining Co.'s No. 9 Stephens, 75 bbls. at 2,417 feet; No. 36 Stephens, 450 bbls. at 2,409 feet; No. 3-G Waggoner, 300 bbls. at 1,883 feet; Kimberlin and others' No. 1 Castlebury, dry at 2,518 feet; Landreth Production Co.'s No. 2-A Waggoner, 325 bbls. at 1,857 feet; No. 5-D Waggoner, 375 bbls. at 1,912 feet; No. 6-D Waggoner, 370 bbls. at 1,900 feet; No. 8-D Waggoner, 450 bbls. at 1,883 feet; No. 3-F Waggoner, 310 bbls. at 1,927 feet; No. 1-G Waggoner, 350 bbls. at 1,869 feet; Levy and others' No. 1 Waggoner (Block 4), dry at 2,483 feet; McCamey and others' No. 10 Stephens, 100 bbls. at 2,370 feet; No. 21 Stephens, 30 bbls. at 1,960 feet; No. 27 Stephens, 125 bbls. at 2,311 feet; Magnolia Petroleum Co.'s No. 46 Piper, dry at 2,097 feet; No. 50 Summer, dry at 2,100 feet; Murchison and others' No. 1 Ditto, 20 bbls. at 1,339 feet; Texhoma Oil & Refining Co.'s No. 1 Waggoner, dry at 2,004 feet; Bob Waggoner and others' No. 1 Bard, dry at 1,357 feet; Winnipeg Oil Co.'s No. 6-A Bond, 10 bbls. at 2,437 feet.

Archer County

Caldwell and others' No. 2 Hutcherson, 95 bbls. at 1,377 feet; Grisham and others' No. 1 Jackson, dry at 1,601 feet; Magnolia Petroleum Co.'s No. 4 Rutty, 110 bbls. at 892 feet; No. 6 White, dry at 2,073 feet; No. 10 Wilmot, dry at 1,606 feet; Muse and others' No. 2-B Wilson, 60 bbls. at 1,518 feet; Pandem Oil Corp.'s No. 1 Hutcherson, 110 bbls. at 1,379 feet; Ramming and others' No. 1 Browning, dry at 1,815 feet; Staley and others' No. 3 Wilson, 195 bbls. at 1,531 feet; Texhoma Oil & Refining Co.'s No. 9-A Taylor, 45 bbls. at 1,615 feet; Wharton and others' No. 1 Cowan, dry at 1,513 feet; Bridwell and others' No. 6 Boren, 90 bbls. at 1,075 feet; British American Oil Co.'s No. 9 Rogers, 50 bbls. at 1,282 feet; Burns and others' No. 2 Tabor, dry at 1,552 feet; Magnolia Petroleum Co.'s No. 4 Stampfli, 25 bbls. at 1,367 feet; Major Petroleum Co.'s No. 2 Cowan, dry at 1,064 feet; Merrick and others' No. 1 Darilek, dry at 1,462 feet; Murchison and others' No. 1 Deitrick, dry at 1,218 feet; Panhandle Refining Co.'s No. 6 Abercrombie, dry at 1,410 feet; Simms Oil Co.'s No.

1 Richardson, 5 bbls. at 1,455 feet; Sun Oil Co.'s No. 14 Farmer, dry at 1,501 feet; No. 1 Schlegel, dry at 1,032 feet; The Texas Co.'s No. 14 Hill, 60 bbls. at 1,397 feet; No. 15 Hill, 90 bbls. at 1,379 feet; Texhoma Oil & Refining Co.'s No. 1 Abercrombie, 60 bbls. at 1,335 feet.

Young County

Hinson and others' No. 1 Morrison, dry at 4,101 feet; McLester Brothers' No. 1 Rogers, dry at 3,760 feet; Murchison and others' No. 1 Jeffrey, dry at 1,101 feet; Parks and others' No. 1 Benson, dry at 1,202 feet; Plains Production Co.'s No. 1 Farrow, dry at 1,102 feet; Roeser and others' No. 4-B Cathey, dry at 1,252 feet; Reed and others' No. 1 Leberman, dry at 1,101 feet; Roxana Petroleum Corp.'s No. 3 Burgess, 90 bbls. at 2,130 feet; No. 1 Stowe, dry at 1,150 feet; Sun Oil Co.'s No. 1 Bloodworth, dry at 1,001 feet; Texhoma Oil & Refining Co.'s No. 10 Campbell, 55 bbls. at 914 feet; Tidal Oil Co.'s No. 3 Campbell, 75 bbls. at 919 feet; No. 6 Campbell, 10 bbls. at 924 feet; No. 7 Campbell, 150 bbls. at 906 feet; Willis and others' No. 1 Harrison, dry at 4,977 feet.

Eastland County

Root and others' No. 1 Hart, 6,000,000 feet of gas at 3,279 feet.

Brown County

Cosden and others' No. 8 Baxter, 5 bbls. at 1,298 feet; Evans and others' No. 1 Prather, 60 bbls. at 1,319 feet; Gilman and others' No. 4 Chambers, 90 bbls. at 1,218 feet; Maloy and others' No. 3 Prather, 30 bbls. at 1,313 feet.

Wildcats

Callahan County—Albritton and others' No. 1, Block 51, 100 bbls. at 1,449 feet; Cranfill and others' No. 1, Block 1, 20 bbls. at 1,456 feet; No. 1, Block 34, 50 bbls. at 1,458 feet; No. 1, Block 71, 80 bbls. at 1,424 feet; No. 4 M. K. & T., 100 bbls. at 1,441 feet; Guffey and others' No. 1, Block 21, 100 bbls. at 1,473 feet; Harper and others' No. 1, Block 25, 75 bbls. at 1,442 feet; Mitchell and others' No. 1, Block 52, 110 bbls. at 1,455 feet; No. 1, Block 79, 15 bbls. at 1,440 feet; Shackelford and others' No. 1, Block 43, 10 bbls. at 1,452 feet.

Clay County—Howell and others' No. 1 Edrington, dry at 1,908 feet.

Montague County—Pure Oil Co.'s No. 3 Maddox, 70 bbls. at 944 feet.

Cooke County—Pettit and others' No. 1 Williams, dry at 3,612 feet.

Throckmorton County—Humble Oil & Refining Co.'s No. 1 Harrison, dry at 4,977 feet.

Shackelford County—Milham Corp.'s No. 1 Clausell, dry at 2,453 feet; No. 3 Clausell, dry at 730 feet.

Coleman County—Morrison and others' No. 1 Young, 20,000,00 feet of gas at 1,653 feet; Ratblott and others' No. 1 Pipe, dry at 1,200 feet; Wright and others' No. 1 Nicholson, dry at 1,232 feet.

Irion County—Kirby Petroleum Co.'s No. 1 Sawyer, dry at 2,700 feet; Va-Tex Petroleum Co.'s No. 1 Case, dry at 3,062 feet.

Wichita County Drilling

Bridwell and others' No. 1 Miller, drilling at 1,250 feet; Burt and others' No. 1 Hansard, 1,140 feet; Fisher and others' No. 9 Birk, 1,200 feet; Laning and others' No. 1 Riley, 682 feet; Magnolia Petroleum Co.'s No. 8 Holtzen, sand at 1,891 feet; No. 119 Reilly, underreaming; No. 122 Reilly, underreaming; No. 124 Reilly, cleaning out at 1,450 feet; Robinson and others' No. 19 Roller, drilling at 650 feet; Texhoma Oil & Refining Co.'s No. 1-A Beach, setting casing at 1,525 feet; White and others' No. 1 McClure, drilling at 2,250 feet; Panhandle Refining Co.'s No. 4 Jackson, 500 feet; Shappell Oil Co.'s No. 36 Jackson, sand at 1,800 feet; Allen and others' No. 1 Ancell, drilling at 1,200 feet; Apple and others' No. 16-A Jennings, 1,300 feet; Beaudoin and others' No. 1 Snow, 1,300 feet; Biggs Oil Co.'s No. 12 Fisher, 750 feet; Broder and others' No. 2 Jennings, sand at 1,837 feet; Compton Oil Corp.'s No. 1 Hirschi, coring at 2,519 feet; Dale Oil Corp.'s No. 19 Jennings, drilling at 1,200 feet; No. 20 Jennings, 400 feet; Electra Gulf Oil Co.'s No. 7 Murray, 1,200 feet; Hammond and others' No. 3 Burnett, showing oil at 1,804 feet. Magnolia Petroleum Co.'s No. 66 Allen, underreaming; No. 69 Honaker, underreaming; No. 32 Maer, drilling at 600 feet; No. 33 Maer, 820 feet; No. 52 Rio Bravo, cleaning out at 1,400 feet; No. 53 Rio Bravo, drilling at 500 feet; No. 10 Watkins, 500 feet; O'Neil and others' No. 1 Roberts, 475 feet; Patterson and others' No. 4 Fisher, coring at 1,481 feet; Perkins and others' No. 1 Munger, drilling at 1,825 feet; Ryan Petroleum Co.'s No. 2 Henson, fishing at 1,621 feet; No. 48 Nance, drilling at 450 feet; Staley and others' No. 1 Marshall, 2,009 feet; Texhoma Oil & Refining Co.'s No. 6-E Burnett, 1,612 feet; No. 1 Ferguson, 1,386 feet; No. 11 Waggoner Brothers, 1,275 feet; No. 12 Waggoner Brothers, 1,296 feet.

Wilbarger County

Barkley and others' No. 2-A Stephens, cleaning out at 2,390 feet; No. 8-A Stephens, drilling at 2,235 feet; No. 9-A, 2,050 feet; No. 2-B Stephens, fishing at 1,140 feet; No. 3-B Stephens, drilling at 850 feet; No. 4-B Stephens, 300 feet; Bridwell and others' No. 8 Stephens, showing oil at 2,423 feet; Continental Oil Co.'s No. 8 Zipperle, showing oil at 1,820 feet; Culberson and others' No. 1 Berry, fishing at 2,125 feet; Garretson and others' No. 1 Waggoner, drilling at 200 feet; Graham and others' No. 1 George, 2,040 feet; Gray Oil Co.'s No. 1 Waggoner (Section 17), 900 feet; Herbert Oil Co.'s No. 1 Waggoner, 2,250 feet; Humble Oil & Refining Co.'s No. 23 Castlebury, 651 feet; No. 6 Stephens, showing oil at 2,325 feet; No. 22 Stephens, fishing at 2,027 feet; No. 31 Stephens, cleaning out at 2,354 feet; No. 33-A Stephens, fishing at 2,400 feet; No. 38-A Stephens, drilling at 1,663 feet; No. 40-A Stephens, 638 feet; No. 41-A Stephens, 220 feet; No. 4-G Waggoner, 727 feet; No. 4-H Waggoner, 707 feet; No. 2-I Waggoner, 1,717 feet; No. 1-K Waggoner, 1,174 feet; No. 1-L Waggoner, 628 feet; No. 1-M Waggoner, 183 feet; Independent Oil & Gas Co.'s No. 1 Waggoner, 450 feet; Kolp and others' No. 10-A Waggoner, 800 feet; Landreth Production Co.'s No. 3-A Waggoner, 1,207 feet; No. 5-A Waggoner, 440 feet; No. 1-A-A Waggoner, 1,665 feet; No. 1-B-B Waggoner, 1,045 feet; No. 1-C-C Waggoner, 1,290 feet; No. 4-D Waggoner, fishing at 2,135 feet; No. 7-D Waggoner, drilling at 1,671 feet; No. 9-D Waggoner, 950 feet; No. 10-D Waggoner, 248 feet; No. 1-E Waggoner, 2,473 feet No. 4-F Waggoner, 806 feet; No. 6-F Waggoner, drilling out plug at 1,876 feet; No. 1-H Waggoner, cementing at 1,855 feet; No. 1-I Waggoner, drilling at 500 feet; No. 1-P Waggoner, underreaming; No. 1-P-P Waggoner, drilling at 730 feet; No. 1-Q Waggoner, spudding; No. 1-Q-Q Waggoner, drilling at 1,180 feet; No. 1-U Waggoner, 1,690 feet; Lawson and others' No. 14 Waggoner, 1,690 feet; Jim McCamey and others' No. 1 Waggoner, 1,680 feet; McCamey and others' No. 28 Stephens, standardizing at 1,926 feet; No. 29 Stephens, drilling at 900 feet; Magnolia Petroleum Co.'s No. 70 fee, 1,800 feet; Milham Corp.'s No. 2-A Waggoner, at 500 feet; No. 1-C Waggoner, 1,110 feet; No. 1-D Waggoner, spudding; Murchison and others' No. 2 Ditto, drilling at 1,100 feet; Prairie Oil & Gas Co.'s No. 2-A Waggoner, 1,720 feet; Roser and others' No. 1-B Waggoner, 1,735 feet; Roxana Petroleum Corp.'s No. 3-A Waggoner, 325 feet; No. 1-C Waggoner, 1,445 feet; Shamrock Oil Co.'s No. 1 Waggoner, 1,413 feet; Sloan and others' No. 1 Waggoner, 1,980 feet; South Vernon Oil Co.'s No. 1 Bond, 1,325 feet; Staley and others' No. 8 Stephens, fishing at 2,287 feet; No. 10 Stephens, drilling at 2,060 feet; No. 1 Stephens, 2,280 feet; States Oil Corp.'s No. 1 Waggoner (Section 66), 1,570 feet; The Texas Co.'s No. 1 Dill, 500 feet; No. 1 Zipperle, 400 feet; Tidal Oil Co.'s No. 1 Waggoner (Section 36), 2,320 feet; Winnipeg Oil Co.'s No. 1 Waggoner, 1,375 feet; Wood and others' No. 1 Dennis, setting casing at 2,060 feet.

Archer County

Consolidated Oil Co.'s No. 1 Mangold, testing at 1,798 feet; Shappell Oil Co.'s No. 37 Jackson, drilling at 600 feet; Atlantic Oil Production Co.'s No. 1 Plowman, 960 feet; Bailey and others' No. 1 Gose, 715 feet; Barkley and others' No. 17 Wilson, 1,100 feet; Boller and others' No. 9 Wilmot, 800 feet; Burns and others' No. 11 Wilson, 480 feet; Carter and others' No. 1 Wilson, 1,230 feet; Day and others' No. 4 White, 1,300 feet; Continental Oil Co.'s No. 1 Jackson, 1,160 feet; Harris and others' No. 1 Mahler, 1,580 feet; Maer and others' No. 1 Hutcherson, cleaning out at 1,378 feet; Mahlstedt Mook Oil Co.'s No. 2 Hutcherson, drilling at 1,510 feet; Norwood and others' No. 1 Rutty, sand at 1,588 feet; Pandem Oil Corp.'s No. 2 Hutcherson, drilling at 400 feet; No. 1 Parkey, at 1,605 feet; Panhandle Refining Co.'s No. 1 Brown, 200 feet; Phillips Petroleum Co.'s No. 88 White, fishing at 1,614 feet; Riner and others' No. 1-D Wilson, drilling at 1,590 feet; Staley and others' No. 14-C Wilson, 1,100 feet; No. 4 Wilson, 1,510 feet; Sanford and others' No. 1 Cowan, 945 feet; Stewart Developing Co.'s No. 1 Plowman, 200 feet; Texhoma Oil & Refining Co.'s No. 10-A Taylor, 1,435 feet; The Texas Co.'s No. 1 Taylor, 1,410 feet; No. 1 T. B. Wilson, 1,500 feet; Wichtex Oil Co.'s No. 3 Jackson, is drilling at 1,200 feet; Wilson Drilling Co.'s No. 5-A Wilson, 600 feet; Young and others' No. 1 Abney, showing oil at 1,748 feet; Bridwell and others' No. 1 Turbeville, drilling at 1,415 feet; B. S. & B. Oil Co.'s No. 1 Parkey, lime at 1,125 feet; Consolidated Oil Co.'s No. 1 Wolf, sand at 1,350 feet; Hammond and others' No. 1 Oldhom, showing oil at 1,346 feet; Kentucky Oil Corp.'s No. 1 Baggett, drilling at 300 feet; Logan and others' No. 1 Logan, 995 feet; Major Petroleum Co.'s No. 3 Cowan, 200 feet; Pandem Oil Corp.'s No. 1 Crawford, 1,150 feet; Perkins and others' No. 8 Anderson, cementing at 1,414 feet; Red Bank Oil Co.'s No. 1 De-Kinder, drilling at 615 feet; Reilly and others' No. 1 Wilhelm, fishing at 1,170 feet; Shasta Oil Co.'s No. 1 Sorelle, drilling at 600 feet; Sun Oil Co.'s No. 15 Farmer, 1,030 feet; Texhoma Oil & Refining Co.'s No. 4 Oldhom, 1,030 feet; No. 2 Abercombie, showing oil at 1,844 feet; American Refining Co.'s No. 2 Portwood, drilling at 1,155 feet; No. 3 Portwood, 1,010 feet; Atlantic Oil Production Co.'s No. 1 Falls County, 1,095 feet; British American Oil Co.'s No. 10 Rogers, 900 feet; Cook and others' No. 1 Kruger, 820 feet; Green and others' No. 2-A Wilborn, 640 feet; Magnolia Petroleum Co.'s No. 2 Brown, sand at 1,460 feet; No. 4 Portwood, cementing at 1,365 feet; No. 5 Portwood, cementing at 1,365 feet; No. 10 Lowe, drilling at 1,120 feet; Marland Oil Co.'s No. 3 Richardson, 3,091 feet; Murchison and others' No. 1 Talbott, 325 feet; Pandem Oil Corp.'s No. 4 Cockrell, 1,240 feet; No. 5 Cockrell, 350 feet; Phillips Petroleum Co.'s No. 1 Falls County, 1,225 feet; Sun Oil Co.'s No. 6 Richardson, setting casing at 1,448 feet; No. 7 Richardson, drilling at 1,110 feet; The Texas Co.'s No. 16 Hill, 1,140 feet; No. 1 Wilborn, 1,356 feet; Trio Oil Co.'s No. 8 Brown, 1,340 feet; No. 9 Brown, 670 feet; Verschoyle and others' No. 2 Young, 1,420 feet; Winnipeg Oil Co.'s No. 1 Portwood, 1,155 feet.

Young County

Comp Oil & Gas Co.'s No. 2 Campbell, drilling at 100 feet; Christie and others' No. 3-B Keathley, 100 feet; Consolidated Oil Co.'s No. 1 Gibbs, 100 feet; Coones and others' No. 2 Scarborough, 4,320 feet; Everts and others' No. 1 Campbell, 675 feet; Hoyle and others' No. 1 Benson, 675 feet; Newberg and others' No. 1 Speer, 380 feet; Plains Production Co.'s No. 1 Cosey, 325 feet; Reed and others' No. 1 Leberman, 400 feet; Richard and others' No. 3 Campbell, 762 feet; Seigler and others' No. 1 White, 928 feet; Simms Oil Co.'s No. 1 Goldston, 2,670 feet; Suggett and others' No. 1 Perkins, 260 feet; Texas Pacific Coal & Oil Co.'s No. 1 Kimkel, 1,207 feet; The Texas Co.'s No. 1 Barry, 326 feet; Texhoma Oil & Refining Co.'s No. 15 Campbell, 776 feet; No. 16 Campbell, 860 feet; Tidal Oil Co.'s No. 11 Campbell, 840 feet; No. 12 Campbell, 760 feet; No. 13 Campbell, 150 feet; Willis and others' No. 2 Campbell, 100 feet; Whitehead and others' No. 2-B Belknap Oil Co., 2,020 feet.

Stephens County

Gardner and others' No. 2 Cunningham, drilling at 1,600 feet; Mid-Kansas Oil & Gas Co.'s No. 7 Hill, 2,400 feet; No. 8 Hill, 1,225 feet; Mid-Texas Oil Co.'s No. 3 Cunningham, 1,005 feet; No. 1 Morrison, 1,150 feet; Prairie Oil & Gas Co.'s No. 1 Donnell, 410 feet; Rhodes and others' No. 1 Langford, 2,275 feet; Atkinson and others' No. 1 Keathley, 2,500 feet; Brown & Co.'s No. 4 Akin, spudding; Carter and others' No. 1 Smith, drilling at 2,100 feet; Chastain and others' No. 1 Young, 900 feet; Curry Pool Oil Co.'s No. 2 Sikes, 1,806 feet; Hickok P. & D. Co.'s No. 1 Parks, 275 feet; Hughes and others' No. 5 Gandy, 560 feet; Hughes and others' No. 1 Lang, underreaming; No. 1 Thompson, setting casing at 1,400 feet; Landreth Production Co.'s No. 1 Elliott, setting casing at 3,598 feet; No. 4 Gratz, drilling at 1,905 feet; No. 1 Guest, 2,825 feet; Roth and others' No. 1 Suddeth, 3,650 feet; Scanlon and others' No. 1 Ming, 3,225 feet; States Oil Corp.'s No. 3 Cooper, setting casing at 3,557 feet; States Oil Corp.'s No. 1 Dean, drilling at 3,575 feet; No. 2 Hawkins, 200 feet; Strawn Petroleum Co.'s No. 25 Stuart, setting casing at 1,565 feet; Swensondale Oil Co.'s No. 1-B Swenson, drilling at 980 feet; Texas Pacific Coal & Oil Co.'s No. 7 Adams, 3,570 feet; No. 59 Binney, 850 feet; No. 60 Binney, spudding; No. 4 Hard, drilling at 3,045 feet; No. 8 Veale, fishing at 4,050 feet; The Texas Co.'s No. 2 Grimes, drilling at 3,245 feet; Walker-Coldwell's No. 1 Keathley, 3,320 feet.

Eastland County

Barkley and others' No. 1 Reid, drilling at 3,260 feet; Carter and others' No. 1 Falls, 2,025 feet; Corzelius Brothers' No. 1 Whitson, 860 feet; Dean and others' No. 1 Dawson, 450 feet; Hoffer Oil Corp.'s No. 1 Thurman, 3,165 feet; Lightfoot and others' No. 3 Allen, 2,025 feet; Mahlstedt Oil Co.'s No. 1 Webb, 600 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Williams, 3,400 feet; Woods and others' No. 1-B Collins, 900 feet; Adams and others' No. 1 Grove, 800 feet; No. 2 Grove, 300 feet; Hickok P. & D. Co.'s No. 1 Amis, 1,975 feet; No. 1 Kimbrough, underreaming; McBride and others' No. 1 Johnson, drilling 1,390 feet; Pitzer and others' No. 1 Martin, spudding; Reeves and others' No. 1 Leveridge, drilling at 3,100 feet; Root and others' No. 1 Luse, cleaning out at 3,336 feet; Root and others' No. 5 Gibson, drilling at 700 feet.

Brown County

Adams and others' No. 1 Newton, cleaning out at 3,070 feet; Anderson and others' No. 1 Williams, drilling at 2,175 feet; Bateman and others' No. 1 Gaines, 2,090 feet; Boysen and others' No. 1 Boysen, 1,600 feet; Cosden and others' No. 3 Chambers, spudding; Cosden and others' No. 1 Gaines, drilling at 1,200 feet; Eastland Oil Co.'s No. 1 Stone, 1,236 feet; Gillespie and others' No. 1 Gunn, 1,180 feet; Gillman and others' No. 5 Chambers, 300 feet; No. 2 Thompson, 320 feet; Gray and others' No. 1 Lewis, spudding; Infield Petroleum Co.'s No. 1 Graham, drilling at 1,900 feet; McLester Oil Co.'s No. 1 Woolridge, 500 feet; Prairie Oil & Gas Co.'s No. 10 Gaines, 1,208 feet; Schaffrer and others' No. 4 Prather, fishing at 900 feet; No. 5 Prather, drilling at 1,000 feet; Shadbolt and others' No. 1 Lewis, spudding; Simms Oil Co.'s No. 4 Gaines, drilling at 600 feet; Suddereth and others' No. 1 Byrd, 1,298 feet; Thompson and others' No. 1 Ward, 675 feet.

Reagan County

Big Lake Oil Co.'s No. 49 University, fishing at 2,700 feet; No. 61 University, drilling at 2,025 feet; No. 52 University, 860 feet; No. 53 University, 680 feet; No. 54 University, 1,410 feet; No. 55 University, 860 feet; No. 20-A University, 1,730 feet; No. 23-A University, 345 feet; No. 25-A University, 1,465 feet; Texon Oil & Land Co.'s No. 31 Group 1 University, 1,450 feet; No. 33 Group 1 University, 2,180 feet; No. 34 Group 1 University, 1,890 feet; No. 36

(Continued on Page 123)

Late News From the Fields

COLORADO

DENVER, Colo., Dec. 14.—The Texas Co.'s Emerald well on the Rangely structure, Rio Blanco County, is running wild. The well had just been capped and Superintendent A. B. Patterson and Field Superintendent M. F. Towles were leaving for lunch when the big explosion blew off the control head. Tools weighing 5,000 pounds, which were in the hole, shot in the air. Sixteen joints of 10 and 12-inch casing were thrust out of the hole by the tremendous pressure. The 40-ton cement anchors were torn from their moorings and the derrick was reduced to kindling wood.

The Texas Co.'s Bank well on the Tow Creek structure is running 8¼-inch casing at 3,525 feet. A good showing of oil was encountered at 3,400 feet. The Pioneer sand is expected at about 4,720 feet.

MEXICO

Pan American Petroleum & Transport Co. through its Mexican subsidiary, has completed well No. 41 Chapacao, flowing 10,000 bbls. of oil a day. It also has brought in No. 37 Chijol, good for 12,000 bbls. This is an extension of the field to the north.

VENEZUELA

Lago Petroleum Corp.'s well No. 38, in the La Rosa, is in and flowed at the rate of 25,000 bbls. a day when it was shut in to regular commercial production. This well is the most northerly one yet drilled in the field.

CALIFORNIA

LOS ANGELES, Cal., Dec. 15.—Associated Oil Co.'s No. 101 Lloyd, in Ventura Avenue Field, staged a short blowout while drilling ahead at 4,700 feet, but the gas was successfully mudded off. The well is located in the extreme eastern part of the field and nearly doubles the present proven acreage. The Associated's Lloyd lease is incidentally extended one-half mile farther east. Indications point to a big well upon completion.

Barnsdall Corp. has completed No. 9 Howard Park in the Rosecrans Field, flowing 1,600 bbls. daily; No. 13, flowing 1,579 bbls.; and No. 23, flowing 1,879 bbls. initial.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Dec. 15.—Keene and others' No. 1 Bruni, in the northwest corner of the northeast quarter of Block 14, Bruni tract, in Webb County, is making 40-minute heads and going over the crown block. It is estimated at 250 bbls. pipe line oil at 1,700 feet. It gives the Mirando Field a decided swing to the east.

GULF COAST

HOUSTON, Tex., Dec. 15.—The improvement noted in all fields, as illustrated by statistics, has caused a more optimistic feeling among operators in Texas and it is predicted next year will see considerable wildcat activity. The chosen spots are the counties adjacent to Reagan, in west Texas; Smith, Rusk and other counties in east Texas; along a minor faulting south of the Balcones, taking in parts of Grimes, Burleson, Milam, Williamson and Bastrop Counties; east and west of San Antonio, including Bexar, Guadalupe, Caldwell, Hays, Medina and stretching south and west to the Rio Grande River. Markets for natural gas in Houston, San Antonio and intermediate places, has resulted in increased drilling in the gas districts in Webb, Live Oak, McMullen, Duval and other counties.

New saline domes in the Coastal region will be tested out on a more extended scale. Inland from the coast parts of Austin, Colorado and Fayette Counties are beginning to get a play. Scouts, geologists and leasers are looking over the territory outlined.

Gulf Production Co.'s No. 19 Hager, in the Orange Pool, was deepened a few feet from 4,600 feet and responded with 2,500 bbls. flow. Keene and others' No. 1 in Aviator Pool, Webb County, flowing 400 bbls. and extends production one-half mile south.

The Texas Co.'s No. 3 Taylor, on the southwest side of the Boling Dome in Wharton County, is estimated between 8,000 and 10,000 bbls. at 3,226 feet. It is choked down to 400 bbls. because of no storage except pits. This means another new pool opened. It is 10 miles west of Damon Mound. Major companies hold most of the close-in acreage.

In Jim Hogg County, O. W. Killam's No. 27 Martinez, is making 100 bbls. and the Magnolia Petroleum Co.'s No. 9 is rated at 125 bbls. The Magnolia Petroleum Co. is starting a deep test in the Wolcott Pool, the first to be drilled there. Killam and Carson's No. 1, Survey 336, is rated as a 35,000,000-foot gasser and Kirkpatrick's No. 1, Survey 835, as a 10,000,000-foot gas well.

The Houston Oil Co. is rigging No. 2 Woods in Goliad County and No. 1 O'Connor in Victoria County. The Gulf Production Co. is also drilling on the O'Connor Ranch.

In the Rockdale-Minerva district, the Texas Petroleum Development Co. is drilling No. 12 Phillips and the National Refining Co. No. 3 Dilworth.

S. H. Spangler's No. 1 Smith, 6 miles northwest of Burton in the western part of Washington County, is in what is termed cap rock, showing some oil at 656 feet.

The acreage held by John R. Hadley in Starr County, on the border, has been taken over by D. A. Rutledge, of Kansas City, who will start a test at once.

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Dec. 15.—Workmen at the Baker wildcat well of the Republic Production Co., in Upton County, have tested the plug placed for shutting off water below the oil pay formation and are now making preparations for shooting the well. Kirby Petroleum Co.'s No. 1 Union Land Co., has reached a total depth of 2,290 feet and is standing full of sulphur water. Drilling is being continued.

In Crockett County the Crockett Drilling Syndicate's No. 2 Shannon, encountered a small showing of oil at 1,460 feet but at 1,510 feet it is reported standing full of salt water. No. 3 Powell, south of the World discovery well in Crockett County is reported to have reached the top of the salt formation at 1,170 feet, 5 feet higher than the same formation was encountered in the World discovery well.

The Texon Oil & Land Co. has one new producer in the Big Lake Field of Reagan County, No. 35 Group 1 University, which is in the pay from 3,001 to 3,015 feet and tested 600 bbls., flowing the first 24 hours. The Big Lake Oil Co. reports No. 30 University, Reagan County, Texas, flowing 1,320 bbls. of oil a day initial.

While not yet listed as a completion Perkins and Cullum's No. 2 Beaver-Electra, in Wichita County, is estimated at about a 75-bbl. well from sand at 1,616 to 1,629 feet. In the old Electra Field Bullington and associates' No. 11 Jennings, is a new producer. It is in sand at 1,610 to 1,622 feet and on a 12-hour test made 70 bbls.

In the south Archer County district, the Trio Oil Co.'s No. 7 Brom, is a new producer, making 350 bbls., flowing and swabbing from sand at 1,381 to 1,418 feet.

There are several new producers in the Wilbarger County area. Staley and associates' No. 9 Stephens, is making 900 bbls. daily from the saturated lime at 2,264 to 2,355 feet. The Landreth Production Co.'s No. 1-F Waggoner, though not completed, is flowing and swabbing at the rate of 350 bbls. from sand at 1,892 to 1,900 feet.

McCamey and others have two new producers on the Stephens lease in the heart of the South Vernon Pool. No. 24 Stephens is one of the big wells of the field, reported flowing at the rate of 50 bbls. an hour from sandy lime at 2,070 to 2,080 feet. No. 25 Stephens is also a new producer. It is in the sandy lime formation at 2,337 to 2,361 feet and is swabbing at the rate of 300 bbls. daily.

OKLAHOMA

The Garber Field in Garfield County, Oklahoma, made a total production of 39,970 bbls. from the deep Wilcox sand, and the combined production of all sands at Garber for Tuesday of this week was 45,426 bbls., divided as follows:

Roxana Petroleum Corp.	6,766
Sinclair Oil & Gas Co.	34,051
Marland Oil Co. and Mid-Continent Petroleum Corp.	2,760
Healdton Oil & Gas Co.	293
Carter Oil Co.	381
Other leases	1,175
Total production all sands	45,426

A list of the wells producing from the deep Wilcox sand follows (in bbls.):

	Oil	Water
Roxana Pet. Corp.:		
1-W Schroeder	200	800
2-W Schroeder	125	500
3-W Schroeder	1,191	1,870
4-W Schroeder	25	1,500
5-W Schroeder	1,112	800
6-W Schroeder	960	2,088
8-W Schroeder	600	800
9-W Schroeder	791	11,000
1-W Wolfe	185	290
2-W Wolfe	1,060	60
Sinclair Oil & Gas Co.:		
19 Hartley	8,825	1,588
20 Hartley	9,665	....
21 Hartley	5,315	990
21 Kisner	1,110	1,102
22 Kisner	325	185
24 Kisner	100	....
25 Denker	30	7
26 Denker	146	300
20 Walker	456	325
23 Walker	1,612	350
25 Walker	420	....
27 Walker	1,707	....
25 Belveal	140	300
26 Belveal	125	165
27 Belveal	307	175
29 Belveal	487	10
30 Belveal	130	....
10 Shaffer	100	....
Marland Oil Co. and Mid-Cont. Petroleum Corp.:		
41 School Land	60	210
42 School Land	195	60
43 School Land	28	20
45 School Land	205	860
47 School Land	20	7
53 School Land	300	2,000
54 School Land	361	406
55 School Land	356	....
58 School Land	450	....
61 School Land	330	70
Healdton Oil & Gas Co.:		
29 Belveal	56	....
30 Belveal	79	37
31 Belveal	15	8
Carter Oil Co.:		
52 Dively	271	....
Total Garber deep sand	39,970	28,883

At Garber, the Sinclair Oil & Gas Co. has 65,000,000 feet of gas in its No. 26 Hartley. The gas was found in sand approximately 2,600 feet deep. The gas came as a surprise and consequently the exact depth is not known. The last time the well was measured up the total depth was 2,574 feet. This huge volume of gas may cause the well to catch fire owing to friction.

West of the Cromwell Pool in Seminole County, the Continental Oil Co. and the Gladys-Belle Oil & Gas Co. has a good well in No. 2 Williams, SW cor. SE SW Section 28-11-8. Sand was 3,397-3,407 feet and the well is flowing at the rate of 800 bbls. a day.

A new pool may be opened up in the Osage country as a result of the Devonian Oil Co.'s No. 1, NW cor. NE NW NW Section 30-21-10, which had the Bartlesville sand 2,111-15 feet. This is the first Bartlesville production in this locality.

Six miles north of the Burbank Pool, George S. Bole has a dry hole in No. 1, SW cor. SE Section 3-28-5. It is dry and abandoned at a total depth of 3,027 feet.

In the Davenport Field, the Amerada Petroleum Corp.'s No. 2 Belles, NW cor. NE SW Section 3-14-5, had the sand 3,425-67 feet and has 700 feet of oil in the hole. The Phillips Petroleum Co.'s new well, No. 1 Nickel, NE cor. SE NE Section 10-14-5, made 315 bbls. for the 24 hours ending Tuesday morning at 7 a. m.

TRINITY SAND TEST

MEXIA, Tex., Dec. 14.—Morley & Morley will make a Trinity sand test of their No. 1 Head, 8 miles southeast of the short lived Edwards lime gusher of the Humphreys Oil Co. at Kosse, Limestone County, drilled several years ago. The Morley & Morley test was drilled to 3,859 feet without commercial oil showings, but there is said to be a good showing of gas at its present total depth. Pipe has been set and the well will soon be completed. It is on a block of 3,000 acres.

Cross Plains Pool Boosts Callahan Co. Output to 5,720 Bbls.

FORT WORTH, Tex., Dec. 12.—The shallow oil fields of Callahan County, which seem to be getting the lion's share of the play in that section of Texas just at this time, are now producing an average daily output of 5,720 bbls. of crude daily, according to the latest production figures. The big increase in oil output from this county is due largely to the development of the Cross Plains Townsite Pool in the extreme southeastern part of the county where some unusually good wells are being brought in from a sand formation found at 1,440 to 1,450 feet.

Two of the best wells so far completed in the field were listed as completions this week and have been turned into pipe lines. The No. 1 in Block 23 of Brannon and others is one of the largest. It has an initial flow of 800 bbls. daily. Another big producer is the No. 1 in Block 22 belonging to Kirk & Brewer of Gorman. This well has just been completed with a flush production of 975 bbls.

During this week there were six completions on the Cross Plains Townsite, only one of which was a failure. The other five wells have an aggregate flush production of 2,050 bbls. daily.

ROCKEFELLER BUST UNVEILED

A bust of John D. Rockefeller by Jo Davidson was unveiled recently in the main hall of the new Standard Oil Co. building at 26 Broadway. The figure occupies a niche in the wall near the front entrance. The bust took the sculptor over two years to complete. It is made of Burgundian marble, which in coloring harmonizes with the Rosetta marble walls of the hall. Mr. Rockefeller's name is carved in the marble frieze directly over it. Mr. Rockefeller sat for two weeks for the likeness at his country place at Pocantico Hills, N. Y., and when it was completed, is said to have expressed himself as very much pleased with it.

VACUUM VETERAN HONORED

Carl J. Hamm, superintendent of the Paulsboro, N. J., refinery of the Vacuum Oil Co., recently rounded out a 25-year term of service with the company and was summoned to New York where Edward Prizer, chairman of the board of directors presented to him a service emblem at a banquet given in Mr. Hamm's honor. Mr. Hamm was born in Limestone, N. Y., in the Bradford oil field, and his first work for the Vacuum Oil Co. was as a laboratory assistant in the Acme refinery at Olean, N. Y.

TULSA FIRM GETS VERDICT

PITTSBURGH, Pa., Dec. 12.—Damages including interest in the amount of $11,434.60 were awarded the Bell Oil & Gas Co., Tulsa, Okla., in a verdict in United States District Court against the Freedom Oil Works Co. The Bell concern sued for approximately $20,000 profits alleged to have been lost by reason of the Freedom company failing to buy gasoline contracted for, for the year 1923.

Rouen - la Tour Jeanne d'Arc

The Courage of our Convictions

There is a legend in old Rouen that Joan of Arc tried to kill herself by leaping from the parapet of the old tower in which she was imprisoned. Did she fear a worse death at the hands of her jailors or had she lost the courage of her convictions? In any case, she lived and her old bravery soon returned and supported her during her trial.

The courage of our convictions is just as important to every business man and every company as it was to Joan of Arc.

When we know that our convictions and principles of business dealing are integrity and honor, we have the courage to face temporary perplexities of modern business. The James B. Berry's Sons Company has the courage of its convictions, founded on its thirty-five years of experience.

JAMES B. BERRY'S SONS COMPANY

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Oklahoma Field Operations

By J. L. Dwyer

Deepening of one well and completion of another in deep sand in Garber Field on Sunday of this week increased production there to 40,891 bbls., Saturday's deep sand output having been 34,713 bbls. Seminole County wildcat swabbing 70 bbls. Wildcat 12 miles north of Thomas Pool has showing at 3,640 feet.

The Garber Field, in Garfield County, Oklahoma, still continues in the spotlight of attraction. This great operation shows phenomenal increases and decreases in production, as though in mockery of the prophets who attempted to predict its future productivity. All during last week, it slumped at the rate of 2,000 bbls. a day, and on Sunday night, the deepening of one well and drilling in of another caused a big increase in the production of the 4,400-foot Wilcox sand. The Sinclair Oil & Gas Co. is the beneficiary of this activity, and its deep sand production leads the field.

For the 24 hours ending Monday morning at 7, the Garber deep sand production was 40,891 bbls., and the total production of the Garber Field was 46,457 bbls. The Sinclair Oil & Gas Co.'s No. 20 Hartley, NW cor. SW NW, Section 18-22-3w, which was deepened from 4,248 feet to 4,255 feet with the best pay in the foot between 4,252 and 4,253 feet. This well produced 7,590 bbls. on Sunday. The Sinclair Oil & Gas Co.'s No. 21 Hartley, SE cor. SW NW, Section 18-22-3w, found the sand at 4,238-75 feet, with the first oil at 4,250 feet. On Sunday this well produced 4,380 bbls. The production of the Sinclair Oil & Gas Co. in the deep sand in this field for Sunday was 29,153 bbls., and the Roxana Petroleum Corp.'s deep sand production for the same period was 8,690 bbls. The completion of the two deep wells mentioned above extends the field one location east and one location north, and will very likely result in several new operations being started if no water appears in either of the new Hartley wells. Saturday's production in the deep sand at Garber was 34,713 bbls.

Interesting Wildcats

The most interesting among the wildcats were two wells being drilled by Morgan & Flynn, one in Seminole County and the other 1 mile northeast of the Davenport Field in Lincoln County. In Seminole County, Morgan & Flynn's No. 1 Ingram, NW cor. NW SE Section 10-9-5, had a sand 3,558-60 feet with 2,800 feet of oil in the hole. After the swab was run several times, the well made a flow of 68 bbls. This is the only flow that the well has made. The swab is putting 70 bbls. a day into the tanks. The horizon has not been determined and the geologists are endeavoring to ascertain from what sand the well is producing. Its identity seems to be limited to either the Gilcrease or the Cromwell sand. North of the Davenport Field, Morgan & Flynn's wildcat does not look very encouraging. It is located NW cor. SW Section 25-15-5, and a shell was found 3,396-97 feet and 750,000 feet of gas encountered at 3,400 feet. A liner is being run and the sand will be tested out, but the consensus of opinion is that the well is too deep, and that the pay should have been found at a more shallow depth.

Southeast of the Davenport Field, the Gypsy Oil Co.'s No. 2 Caves, NE cor. NW NW Section 11-14-5, is making 410 bbls. of oil and 17 bbls. of water from sand 3,310-97 feet.

Twelve miles north of the Thomas Pool in Kay County, the Mississippi Valley Oil Co. had a showing in its wildcat in the NE cor. NE Section 22-27-2. The showing was found at 3,640 feet and the well is drilling at 3,661 feet.

In the Wilcox sand territory around Hominy, the Meridian Petroleum Co.'s No. 7, SE cor. SW NW NW, Section 18-22-9, had the Wilcox sand 2,575-2,632 feet and is making 35 bbls. of oil and 10 bbls. of water.

Fuhrman Well Deepened

In the Fuhrman Pool in Hughes County, the Independent Oil & Gas Co. and Transcontinental Oil Co. deepened No. 1 Harjo, NE cor. NW SW, Section 26-9-9, and the well responded with an increase to 1,026 bbls. a day. The well was deepened from 3,370-74 feet and it started flowing at 45 bbls. an hour after the increase.

In the same section of Hughes County, the Roxana Petroleum Corp. and John L. Brock, Jr., have 1,000 feet of oil in the hole in No. 1 Bruner, SW cor. SW NW, Section 28-7-8. The oil was found in lime, 3,963-4,000 feet.

North of the Garber Field in Garfield County, the Marland Oil Co. has 25,000,000 feet of gas in its wildcat well, NW cor. SE, Section 19-23-3w. The gas was found in sand 4,025-35 feet.

East of Okmulgee, considerable interest is displayed in a small pool opened some time ago by the Roxana Petroleum Corp. in Section 15-13-14. The discovery well in this section had an initial production of only 80 bbls., and at four months old it is still making 40 bbls. The Wilcox sand is found in this territory at 2,470 feet. There are six wells drilling on adjacent leases.

During the coming week, the future of the North Baltimore Pool, southwest of Okmulgee, will be determined by the completion of two wells which are approaching the sand. The discovery well in this pool is producing 325 bbls. a day from the Wilcox sand. It is 8 weeks old.

Comanche County

Bicker & Reed's No. 1, C SE SW, Section 3-3-10w, had sand 1,440-1,444 feet and the well pumped 65 bbls. the first 24 hours.

Okmulgee District

West of Beggs, the Santuna Oil Co. is rigging up No. 4 Cousins, SW cor. NW NW, Section 1-15-11, to test out the Wilcox sand. It is a twin well to No. 1 Waite Phillips Co.'s No. 2, SE cor. NW SE, Section 14-15-11, had the top of the sand 2,828-2,838 feet with 1,600 feet of oil in the hole and is being cleaned out. Phillips Petroleum Co. is drilling at 1,370 feet in No. 6 Grayson, CEL NW NE, Section 1-15-12. Phillips Petroleum Co. has spudded No. 1, NE cor. SE, Section 22-15-12. Noble Oil & Gas Co. has a well in No. 1, SW cor. NW, Section 23-15-12. Sand was 2,143-2,155 feet and the well is making 15 bbls. on the pump. W. E. Hammon has completed a gas well in No. 3, SW cor. SE SW, Section 26-15-12. Sand was 1,843-1,860 feet and the well is shut in with 22,000,000 feet of gas. Barbara Oil Co. is rigging up No. 2 Douglas, NW cor. NE NW, Section 35-15-12. W. B. Pine has completed another well in the Independent-Devonian Pool. It is No. 5, NE cor. NW, Section 18-15-13, and the sand was 2,710-2,715 feet and the well is good for 400 bbls. after a shot of 5 quarts. Kirkland Brothers and the Carter Oil Co. have a failure in No. 1, NW cor. NE, Section 21-15-13, which is abandoned at 2,615 feet. Turman Oil Co. has a well near Bald Hill in No. 3, CEL SE NE, Section 10-15-14. Total depth was a sand 1,550-1,560 feet and the well was plugged back to a sand found 845-866 feet and shot with 100 quarts. It is making 15 bbls. Swindler & Sons have spudded No. 8, CWL NE SE, Section 20-15-14.

In northern Okfuskee County, the Bingman-Smith Oil Co. and the Gypsy Oil Co. have spudded No. 1, NE cor. NE, Section 21-13-8. Near Okemah, Blakely and others have the rig up for No. 1 West, SW cor. NE, Section 1-12-9. In Tiger Flats, John Burns is rigging up No. 1 Cinda, NE cor. SE NE, Section 12-12-10. Amerada Petroleum Corp. is building the rig for No. 1 Chupco, NW cor. SE SE, Section 17-12-10.

West of Okmulgee, Cowland & Bowers have a duster in No. 1, SW cor. SE SW, Section 9-13-11, which is dry and abandoned at 3,490 feet. Denver Producing & Refining Co. is rigging up another well in the Beets-Rapp Pool. It is No. 5 Thomas, NW cor. SE NE, Section 32-13-11. J. A. Swindler & Sons have a rig on the ground for No. 6 Lewis, CSL NE, Section 25-13-11. Prairie Oil & Gas Co. has a well in No. 11 Tobler, CEL NW SE, Section 25-13-11. Sand was 2,430-2,439 feet and the well started flowing 35 bbls. a day. In the North Baltimore Pool, the Amerada Petroleum Corp. has completed No. 9, CNL NW SW NW, Section 13-12-11. Sand was 2,596-2,601 feet and the well made 20 bbls. after a shot of 20 quarts.

The Independent Oil & Gas Co. has a dry hole in No. 1, NE cor. SE NE, Section 14-12-11, which is being plugged from a total depth of 2,606 feet. J. K. Leard and others have a failure in No. 1, NE cor. SE NE, Section 14-12-11. It is abandoned at 3,534 feet. Morton Petroleum Co.'s No. 5, CSL SW NE, Section 7-12-12, had the sand 2,452-2,506 feet with the best pay 2,472-2,477 feet. The well was shot with 10 quarts and is making 310 bbls. The same company is rigging up No. 7 Tiger, SW cor. NE, Section 7-12-12.

Near Morris, the Utah Oil Co.'s No. 1, NW cor. SE, Section 15-13-14, had an initial production of 327 bbls. from the Wilcox sand 2,436-2,411 feet. Roxana Petroleum Corp. has a rig on the ground for No. 4 Scott, NW cor. SW SE, Section 15-13-14. Fred Cusack and others have a duster in No. 8, CEL SW NE, Section 29-13-14. It had a total depth of 2,570 feet. E. J. Lambert has a failure at 1,905 feet in No. 2-C, S half SW NW, Section 33-13-14.

Hughes County

E. L. Robertson and others' No. 1, SW cor. NW, Section 17-8-10, had a total depth of 3,450 feet and was plugged back to 2,800 feet where 50,000,000 feet of gas was saved. Carter Oil Co.'s No. 3, NE cor. NE, Section 19-8-10, had the upper sand 2,715-2,722 feet with 2,500,000 feet of gas. Roxana Petroleum Corp.'s No. 1, SW cor. NW, Section 28-7-8, had a showing of oil and gas in sand 3,963-66 feet.

Seminole County

The Pure Oil Co. is rigging up a wildcat well in No. 1 Hags, NW cor. NE, Section 15-9-7. Magnolia Petroleum Co.

New Mexico Field Operations

By Special Correspondent

ARTESIA, N. Mex., Dec. 12.—An active drilling campaign will be under way in the Artesia Field within 30 to 45 days and the temporary shutdown will become history, as a result of two important meetings held during the past week and the finding of a new pay sand in the proven area.

Of the greatest importance was the meeting held by the Santa Fe Railroad officials and the New Mexico Oil Men's Association in this city on December 8, at which the former announced that they would publish a rate of 22½ cents per hundredweight on crude from the Artesia Field to Texas Gulf Coast points. This new rate will allow producers here to lay their crude down at Houston, Galveston and Texas City on a competitive basis with the Mid-Continent crude, and in addition will assure them a new market. With oil of the same gravity being purchased in other fields at $1.85 a barrel, producers in this area were forced to sell their product at $1.35 as 75 cents was charged for haulage from the loading racks to the refinery at El Paso. As a result operations in the field have practically been suspended during the past 60 days. This applied to the drilling of offsets, a gentlemen's agreement among the producers eliminating activity along this line.

As a result of the decision of the Santa Fe, represented by T. B. Gallagher, general freight and passenger agent of this division, a number of new companies have signified their intention of entering southeastern New Mexico.

A meeting held in Roswell on December 7, between State Land Commissioner E. B. Swope and the oil men, assured the operators of the full cooperation of the State of New Mexico. Mr. Swope said the State of New Mexico would stand behind its leases and would cooperate in every way to further the development. At the suggestion of the oil producers it was decided to abolish the $30 inspection fee. A liberal interpretation will also be made on all other regulations dealing with the producing end of the business.

The finding of a deeper sand by the Ohio Oil Co. in No. 6 on the Toomie-Allen lease, in the southeast quarter of Section 28-18-28 at a depth of 2,710 feet, will give to the field a new producing level. After making a small well from the regular 2,000-foot sand, the hole was carried down through several hundred feet of gray lime, going through a hard lime shell into the new pay. When cut with acid it showed to be a sandy lime similar to that of the Breckenridge, Texas, Field. Drilled 45 feet in, the hole is now standing 1,700 feet in fluid and on completion of a pocket which is being drilled, the well will be given a heavy shot. From the rapidity with which the oil came in, operators are of the opinion the new sand will be good for around 400 bbls. when completed.

West of the Toomie-Allen, the No. 6 of the Twin Lakes Oil Co. is also being carried down, now drilling below 2,450 feet. In the north extension, The Texas Co. has also decided to deepen No. 4, in Section 5-18-28, which made a very light well in the 2,300-foot sand.

In Section 11-18-28, Flynn, Welch & Yates have a producer in No. 2 on the Dunn permit. This hole has 800 feet of fluid and the well will be given a shot of 240 quarts from the 2,348 to 2,560-foot level.

The Ohio Oil Co.'s No. 2 on the Daugherty lease, in Section 4-18-28, has been given a shot of 190 quarts from 2,202-2,350 feet and will make a nice well when cleaned out. The Frontier Oil

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has spudded No. 1, SW cor. NW, Section 14-8-7. Prairie Oil & Gas Co. has spudded No. 1, SE cor. SW NE, Section 25-8-7. Homa Okla Oil Co. has a dry hole in No. 1-A, NW cor. SW SW, Section 20-8-8, which is abandoned at 3,540 feet. Homa Okla's No. 3, SW cor. SW, Section 32-8-8, had the sand 3,135-3,178 feet and is making 35 bbls. of oil.

Creek County

Mann & Bartlett have a dry hole in No. 1, SE cor. SE, Section 11-19-8, which is abandoned at 2,926 feet. Gled Oil Co. has completed a small gas well in No. 1, SE cor. NE NE, Section 14-19-8. Sand was 2,374-2,425 feet and the well is shut in with 2,000,000 feet of gas. C. E. Page's No. 1, SE cor. SW SE, Section 4-19-9, had top of sand 2,752 feet and is drilling at 2,755 feet with a show of gas. Frank Billingslea and the Shaffer Oil Co. have completed a gas well in No. 2 Barnett, SW cor. NW, Section 7-18-9. Sand was 2,274-2,360 feet and the well is shut in with 10,500,000 feet of gas.

Edgerton and others have a rig up for No. 1-A Billie, NW cor. NE, Section 1-17-11. Jackson & Wise are drilling at 350 feet in No. 3 Lee, SW cor. NE, Section 3-17-11. S. J. Smith is drilling at 460 feet in No. 1 Fife, NE cor. NW SW, Section 2-17-11. W. J. Cole's No. 1, NE cor. NE, Section 5-17-11, is dry and abandoned at 2,765 feet. H. E. Williams has a well in No. 1, SW cor. SE, Section 10-17-11. Sand was 1,661-1,696 feet and the well is making 10 bbls. after a shot of 60 quarts. Shaffer Oil Co. has the rig and tools in for No. 3 Wa Coche, NE cor. NW NE, Section 17-17-11. W. H. Gray has spudded No. 2, SE cor. SW, Section 26-17-11. The Texas Co.'s No. 2, CEL SW SW, Section 25-17-12, had the sand 2,346-2,371 feet with a hole full of water. It was plugged back to a sand at 1,920-1,930 feet and completed with 1,000,000 feet of gas. The Henry Oil Co. has spudded No. 4 Murray, CEL NW NW, Section 36-17-12.

Atlantic Oil Producing Co. has a rig up for No. 5 Johnson, CNL SW SE, Section 14-17-8. Inter-Ocean Oil Co. has spudded No. 1, SW cor. SE NE, Section 27-17-8. Texas & Pacific Coal & Oil Co. has a well in No. 5, SE cor. SW NE, Section 21-17-9. Sand was 2,505-2,544 feet and the well was shot with 50 and with 60 quarts and is making 25 bbls. It made 10 bbls. naturally. The rig is up for No. 6 Hargoche, NW cor. NE SE, Section 21-17-9. Sherman and others are rigging up No. 2, CEL NE SE, Section 19-17-10. Penrod & Thompson have a dry hole in No. 3, SE cor. NW SE, Section 20-16-9, which is abandoned at 2,985 feet.

In the Mounds district, Wilcox Oil & Gas Co. and others have completed No. 5, CNE SW, Section 1-15-11, for 60 bbls. after a shot of 10 quarts in sand 2,293-2,297 feet. Skelly Oil Co.'s No. 1, NE cor. SE NE, Section 11-16-11, is swabbing 50 bbls. from sand 2,153-2,156 feet.

Other Creek Operations

Henry Oil Co. and Karcher's No. 1, SE cor. NW Section 36-15-7, had sand 2,517-65 feet and is spraying 5 bbls. a day. It is not completed. C. G. Tibbens has completed No. 2, SW cor. SE NE Section 34-15-8. Sand was 2,485-2,537 feet and the well is making 15 bbls. after a shot of 60 quarts. Skelly Oil Co. has a well in No. 8, NE cor. SW Section 12-14-8, where the upper sand was found productive. It was hit at 2,384-2,432 feet and the well is swabbing 80 bbls. after a shot of 40 quarts. The Texas Co. has built the rig for No. 2 Bruner, NW cor. SW SE, Section 12-14-8. Texas & Pacific Coal & Oil Co. has a rig on the ground for No. 2 Brown, SE cor, SW NE Section 12-14-8; and the rig is built for No. 3 Brown, NW cor. SW NE Section 12-14-8. C. G. Tibbens has built the rig for No. 5 Bruner, NE cor. SE SW Section 12-14-8. Mountain States Oil Co. has abandoned No. 3, NW cor. SW Section 13-14-8, at a depth of 2,405 feet. C. G. Tibbens has a rig up for No. 1-A Durant, NW cor. SE Section 14-14-8.

In the Hall-Donnelly Pool, the Elm Oil Co. has abandoned No. 1, SW cor. NW SW Section 17-14-10, at 3,440 feet, and is rigging up No. 2 Johnson, SE cor. NW SW Section 17-14-10. Gladys-Belle Oil Co.'s No. 4, NW cor. SW SW Section 17-14-10, had the sand, 2,848-50 feet and the well made 350 bbls. naturally. Producers & Refiners Corp.'s No. 1, SE cor. NE SE Section 18-14-10, is making 105 bbls. after a shot of 40 quarts in sand 2,857-79 feet; the rig is up for No. 2 Harjo, SW cor. NE SE Section 18-14-10. Southwestern Petroleum Co.'s No. 4, NW cor. SE SE Section 18-14-10, had sand 2,867-96 feet and is good for 60 bbls. after a shot of 30 quarts. H. F. Wilcox Oil & Gas Co. has a rig up for No. 2 Dixon, C S half NW SE Section 18-14-10. Wood Oil Co. has built the rig for No. 1 Hoffman, NE cor. SE Section 30-14-10.

Riverland Oil Co. has a small gas well in No. 1-A, SW cor. SE NW Section 28-18-11. Sand was 2,429-30 feet and the well is good for 3,500,000 feet of gas. Skelly Oil Co. has a dry hole in No. 1, SE cor. SW NW Section 28-18-11, which is abandoned at 2,710 feet. Caskie & Ague have a gas well in No. 1, NE cor. SW NE Section 6-18-12, an old well drilled deeper. Sand was 1,690-1,700 feet and the well is making 1,000,000 feet of gas. B. E. Kennady's No. 2 CEL NE NW Section 6-18-12, is a good well, making 125 bbls., after a shot of 60 quarts in sand 2,038-41 feet. Chronic, Williams and Offrey have spudded No. 10 Billie, SW cor. SW Section 7-18-12.

Tulsa County

Dickson-Cooker's No. 5 Blackmore, CWL NW SE Section 26-21-13, had the Wilcox sand 1,404-38 feet with 3,500,000 feet of gas, 50 bbls. of oil and 900 bbls. of water. It was plugged back to the Tucker sand, 953-980 feet and shot with 20 quarts and made 120,000 feet of gas. Carbon & Haver have abandoned the location for No. 1-A, NW cor. SW NE Section 29-21-13. A. E. Smith has completed a gas well in No. 1, SE cor. NE Section 36-21-13, in sand 880-884 feet and the well is shut in with 400,000 feet of gas. J. H. Middleton has a failure in No. 1, SW cor. NW SE Section 7-21-14, which is dry and abandoned at 1,295 feet.

Sand Springs Home has the rig up for No. 3 Page, CEL SW Section 3-19-11, and No. 4 London, CEL SW SE Section 13-19-11, is spudded. Holmes and others' No. 1, CNL SE SW Section 22-19-11, had sand 2,105-15 feet with a show of oil and sand 2,236-40 feet with 500 feet of oil in the hole. Minchell and others have a duster in No. 1-A, SE cor. NE NE Section 28-19-11, which is dry and abandoned at 2,400 feet. Regal Oil & Gas Co. has completed No. 1, SE cor. SE Section 36-19-11. A hole full of water was found at 2,256 feet and the well was plugged back to a sand found 2,170-77 feet and shot with 40 quarts. It is making 12 bbls. King and others' No. 1, NE cor. NW Section 8-19-12, is shut in with 500,000 feet of gas in sand 1,634-38 feet. Suppes and others have completed a gas well in No. 1, SW cor. SE Section 34-19-12. Sand was 1,933-2,011 feet and the well is shut in with 4,000,000 feet of gas. Terrell Oil Co. is rigging up No. 1 Tahladge, SW cor. SW Section 3-18-11.

Spurgan, Houston and others' No. 2 Stansberry, SW cor. SE NE Section 33-18-13, had the Glen sand 1,545-69 feet and the Burgess 1,759-75 feet and is making 10 bbls. a day. Pettit, Ralston and others have spudded No. 1 Klump, C SW SW Section 36-18-13. Eppler and others have abandoned the location for No. 1, CWL SW SE Section 20-18-14. T. A. Best has a dry hole in No. 1, NW cor. SW NW Section 30-18-14, which is abandoned at 1,634 feet.

Grady County

Goldeline Oil Co. and Clark & Cowden have a rig up for No. 1 Cochran, SW cor. NW NW Section 27-3-5w. The Carter Oil Co.'s No. 1, SE cor. SW SW Section 5-3-5w, had sand 2,782-90 feet and made 90 bbls. the first 24 hours. It is now down to 28 bbls. Briscoe & Hall have rigged up a rotary for No. 2 Ville, C N half NE SW Section 14-4-8w.

Logan County

Santrock Oil Co. is rigging up No. 1 Scott, SW cor. NE Section 11-18-3w.

Kingfisher County

Crawford & McKenna have spudded No. 1, NE cor. SW Section 17-16-6w.

Grant County

J. P. Flannigan and others have built the rig and are rigging up on No. 1, NE cor. SW Section 16-26-3w.

Garfield County

Bu-Vi-Bar Petroleum Co. has abandoned the location for No. 1, NE cor. NW SW Section 6-23-4w.

H. F. Wilcox Oil & Gas Co. has spudded No. 1, SE cor. SW Section 15-23-5w. East of the Garber Field the Enid Eighty Oil Co. is drilling at 300 feet with a machine in No. 1 Seamen, NW cor. SE NW Section 1-22-4w. Carter Oil Co. has a dry hole in the Garber Field in No. 52 Dively, NE cor. NW Section 24-22-4w. It is abandoned at 4,548 feet.

Knox Oil Co. is rigging up a deep rotary test in No. 6 Marley, SW cor. SE Section 7-22-3w. Franchot and others have a failure in No. 3, CSL SW SW SW Section 7-22-3w, which is dry at 2,520 feet.

Noble County

J. W. McCulloch has a rig on the ground for a wildcat test in No. 1 Sharpe, SE cor. NE SE, Section 9-24-1.

Magnolia Petroleum Co. has completed No. 1, NE cor. NE, Section 21-21-2w. Sand was 2,390-97 feet and the well is shut in with 15,000,000 feet of gas. Magnolia's No. 1, NW cor. NE, Section 22-21-2w, has 22,000,000 feet of gas in sand 2,366-2,377 feet.

Kay County

Jack & Haver have a rig up for a well in No. 1 Wysesa, SE cor. NE NE, Section 22-27-4. Souligney and others have built the rig for No. 1 School land, NE cor. NW, Section 16-26-3.

In the North Braman Pool, The Texas Co. has the rig up for No. 1 Day, SE cor. NE, Section 20-29-1w. Comar Oil Co. has spudded No. 6 Duncan, SW cor. NE SW, Section 21-29-1w. In the South Braman Pool, the Comar Oil Co.'s No. 3 Noble, NW cor. SW SE, Section 5-28-1w, is spudded, and No. Statton, NW cor. SW NE, Section 5-28-1w, is spudded; the rig is up for No. 2 Biddle, NW cor. NE SW, Section 5-28-1w, and No. 6 Colby, NE cor. SE SW, Section 5-28-1w, is a rig.

In the Blackwell district, the Harold Petroleum Co. and the Arkansas Fuel Co. have built the rig for No. 2 Nells, SE cor. SW SE, Section 4-27-1w; and the rig is on the ground for No. 2 Nells, NW cor. SW SE, Section 4-27-1w. The Carter Oil Co. has the rig up for No. 2 Massey, NW cor. NE, Section 17-27-1w.

Pontotoc County

Texas & Pacific Coal & Oil Co. has completed a gas well in No. 3, CSL SW NW, Section 34-5-6. Sand was 1,932-1,936 feet and the well is shut in with 31,000,000 feet.

Homa Okla Oil Co. has a dry hole in No. 1, NW cor. SW NE, Section 33-5-6, which is abandoned at 4,012 feet.

Payne County

Olean Petroleum Co.'s No. 1, NW cor. NW, Section 24-19-4, had sand 3,715-3,717 feet and is making 1,320 bbls. naturally. It is not completed. Josey Oil Co. has a small gas well in No. 2, NE cor. SE, Section 36-19-5. Sand was 2,965-2,975 feet and the well had a total depth of 3,496 feet. It was plugged back and the gas shut in. The O'Kansas Oil Co.'s No. 2, SW cor. NW SE, Section 7-18-5, has sand 2,867-2,880 feet and made 105 bbls. the first 24 hours. It may be shot. McGill and others' No. 1, SE cor. NW, Section 27-18-6, is spudded.

Roxana Petroleum Corp. has the rig up for No. 1 Stover, SW cor. SW, Section 13-19-4. Olean Petroleum Co. has

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Kansas Oil Field News

By J. L. Dwyer

Greenwood County led in activity during the past week in the Kansas fields. The regular news of the week was conspicuous for the number of gas wells completed.

In Cowley County, three wells were completed in the Rainbow Bend Pool by the owners, Waite Phillips Co., Independent Oil & Gas Co. and the Marland Oil Co. The wells were No. 11 E. Nelson, NW cor. NW, Section 21-33-3, which had sand 3,202-29 feet and is making 90 bbls. on the swab; No. 7 Thurlow, on the banks of the river in approximately the NE cor. SE SE, Section 17-33-3, which is flowing 365 bbls. from sand 3,171-96 feet, and No. 2 Ike Nelson, NW cor. SE NW, Section 21-33-3, which is flowing 300 bbls. from sand 3,211-39 feet. The Rainbow Bend Pool is producing slightly better than 7,000 bbls. daily.

There are two failures in the southeast corner of Chase County recorded this week which seem to limit the prospects of this region. There have been hopes that the Greenwood County production will extend over the line into Chase County. Gene Huff and others of Tulsa, Okla., have production in that territory and their find was responsible for the start of drilling campaign.

Chautauqua County

D. R. Renfrow has a duster in No. 1, SE cor. NW Section 24-33-9, at 2,537 feet.

Elk County

Watchorn Oil & Gas Co.'s No. 8, SE cor. NW Section 3-30-9, is dry and abandoned at a total depth of 2,634 feet. Anderson Brothers have completed No. 2, C NW SE Section 16-31-9, for 7,000,000 feet of gas in sand 1,441-58 feet. Claymond and others have spudded No. 1 Wilbur, NW cor. NW Section 22-31-9. Indian Territory Illuminating Oil Co.'s No. 1, C NW NW Section 31-30-10, is shut in with 400,000 feet of gas in sand 1,520-30 feet. Pure Oil Co. has spudded No. 8 Chaffin, CWL SW SE Section 14-31-10. Theta Oil Co.'s No. 3, CSL NE NE NE Section 27-31-10, is completed for 300,000 feet of gas in sand 1,200-21 feet. Neely Oil & Gas Co. has a well making 40 bbls. naturally in No. 1 C N half NE NE Section 29-31-10. Sand was 1,402-50 feet and 1,549-55 feet.

Butler County

Sinclair Oil & Gas Co. and Emhpire Gas & Fuel Co. have rigged up No. 1 Skear, NE cor. NW NE Section 35-27-4.

Greenwood County

The Theta Oil Co. has spudded No. 5, NW cor. SE SE Section 8-22-10, and the rig is on the ground for No. 6 Pixlee, SW cor. SE SE Section 8-22-10; No. 1 Aisten, SE cor. NE NW Section 12-22-10, is rigging up. Rhodes & Abel have spudded No. 1 NE cor. SW Section 16-22-10. Theta Oil Co. has the rig up for No. 15 Pees, SE cor. NW NE Section 17-22-10.

In the Browning Field, the Sinclair Oil & Gas Co. has the rig pu for No. 33 Browning, SW cor. SE NW Section 20-22-10. Skelly Oil Co. has built the rig for No. 1-A Prather, SW cor. SE Section 20-22-10, and the rig is on the ground for No. 1-B Prather, NW cor. NE Section 29-22-10. Titus and others have the rig up for No. 7 Prather, NE cor. NW Section 29-22-10, and the rig is on the ground for No. 8 Prather, SW cor. SE NW Section 29-22-10. The Texas Co. has a dry hole in No. 1, NW cor. NW Section 32-22-10, which is abandoned at 2,520 feet.

In the Teeter Pool, Darby & Simons have spudded No. 4, NE cor. SE SE Section 36-23-9. Connell and others have spudded No. 1, SW cor. SE Section 14-23-10. Roth, Faurot and the Mission Oil Co. have a rig on the ground for No. 4-B Thrall, C NE Section 27-

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Gulf Coast Oil Operations

By P. L. McGreal

First 1,000-bbl. completion in Luling Field in long time results in increased production there, with gain registered in Coastal fields. Four interesting wildcat tests in Coastal area abandoned during past week. Completions during week numbered 20; 12 were oil producers. Wells being worked over.

HOUSTON, Tex., Dec. 14. — Four wildcat tests, all considered important because of their locations, were abandoned during the week in the Coastal region. Completions totaled 20, with 5 dry and 3 salt water wells, leaving 12 net producers. The initial output for the week was 4,319 bbls.

The Vacuum Oil Co. got salt water in No. 2 Teel, on the southwest side of the old Saratoga Pool, at 3,670 feet. It is located far enough out on the west side of Pine Island Bayou to be considered a wildcat.

The estimated daily average gross production for the week ending December 12 is placed at 96,465 bbls., an increase of 388 bbls. over last week. Of the gross total, 83,915 bbls. are credited to South Texas, an increase of 1,090 bbls., and 12,550 bbls. to the South Louisiana pools. The latter declined 675 bbls.

Compared with last week's figures, Blue Ridge is up 1,600 bbls., Humble 1,260 bbls. and Orange 50 bbls. Two completions there late in the week increased the daily average from a previous estimate of 14,700 bbls. The Goose Creek Pool decreased 300 bbls., Hull 175 bbls., Pierce Junction 400 bbls., South Liberty 375 bbls. and West Columbia 450 bbls.

The following is the estimate for each district:

District—	Gross Bbls.
Batson	1,250
Blue Ridge	2,180
Barber Hill	95
Big Creek	975
Damon Mound	1,050
Dayton	40
Edgerly (La.)	425
Goose Creek	9,275
Humble	5,080
Hull	16,616
High Island	720
Jennings (La.)	1,400
Lockport (La.)	4,050
Markham	75
Orange	16,350
Pierce Junction	2,700
Spindletop	1,125
Saratoga	1,490
Sour Lake	4,200
South Liberty	10,225
Vinton (La.)	6,675
West Columbia	10,200
Welsh-Anse La Bute (La.)	80
Miscellaneous	190
Total	96,465

Southwest Fields

The estimated daily average for the Southwest fields is placed at 42,540 bbls. for the week of December 12. A well with an initial output of 1,000 bbls. in the Luling Field, the first in many months, increased the output there, and completions in the Lockhart (Lytton Springs) Field helped maintain the average above 10,000 bbls. there.

The following is the estimate for each field:

Field—	Gross Bbls.
Luling	22,175
Laredo	3,525
Somerset	2,310
Calliham	230
Rockdale-Minerva	1,000
Jim Hogg County	3,260
Lockhart	10,040
Total	42,540
Grand total for week	139,005
Grand total last week	137,867
Increase	1,138

Week's Work

The following table summarizes the results of the week's work in the various pools and outside territory:

District—	Comp.	Prod.	Dry	Sw.	Big.
Batson	3	19	0	1	1
Blue Ridge	1	1,500	0	0	0
Goose Creek	3	200	0	0	2
Humble	1	0	1	0	0
Hull	2	875	0	1	0
High Island	0	0	0	0	1
Orange	4	1,650	0	0	1
Spindletop	0	0	0	0	1
Saratoga	1	0	0	1	0
Vinton	1	75	0	0	0
Miscellaneous	4	0	4	0	0
Total	20	4,319	5	3	6
Last week	21	4,980	5	1	15

List of Completions

In the Batson Pool, the Ada Belle Oil Co.'s No. 105 Paraffine is a 5-bbl. pumper at 495 feet and No. 106 is good for 4 bbls. at 303 feet. S. R. Buchanan's No. 85 Milhome is a salt water well at 706 feet. The Gulf Production Co.'s No. 163 Wing is bailing at 630 feet.

The Gulf Production Co. deepened No. 3 West-Schenck, on the southeast flank of the Blue Ridge Dome, to 3,950 feet, and it came in flowing 1,500 bbls. Late in the week it was making 1,200 bbls. The same company's No. 13-C Blakely is drilling around 1,135 feet.

In the Goose Creek Pool, the Sun Oil Co.'s No. 14 Bartlett-Smith is heading 100 bbls. at 2,475 feet. The Gulf Coast-Crown Central Oil Co.'s No. 5 joint on the Galliard is pumping 25 bbls. at 2,570 feet, following a work-over and resetting strainer. The Humble Oil & Refining Co.'s No. 64 Smith will make a 75-bbl. pumper at 2,800 feet. The Gulf Production Co.'s No. 32 Beaumont, in the bay, is bailing at 2,320 feet and the Southern Exploration Co.'s No. 5 Freeman, 19 acres of submerged land in the bay, is bailing at 2,050 feet.

The Kirby Petroleum Co.'s No. 1 Lipper, drilled jointly with Kirk Hamill on the north side of the Humble Pool, bailed dry around 2,700 feet.

In the Hull Pool, the Republic Production Co.-Houston Oil Co.'s No. 117 Dolbear, on the east side of the dome, is flowing 850 bbls. at 2,600 feet. The same interests' No. 53 Dolbear is a 25-bbl. well at 2,900 feet. It was deepened. The Higgins Oil & Fuel Co.'s No. 5 Taylor is bailing at 3,975 feet.

The Gulf Production Co.'s No. 3 Smith, on the south side of the High Island Dome, Galveston County, is bailing at 3,100 feet.

Two deep sand wells were developed on the east side of Cow Bayou in the Orange Pool. The Gulf Production Co.'s No. 18 Hager is flowing 1,800 bbls., 25 per cent water, at 4,600 feet and No. 19 Hager is heading 300 bbls. at the same depth. The Brownie Babbittee Oil Co.'s No. 3 Brown on the southeast side of the pool, was revived and is pumping 20 bbls. at 4,950 feet. The Sun Oil Co.'s No. 6 Gunstream is a 70-bbl. pumper at 4,700 feet. The Edgerly Petroleum Co.'s No. 1-B Carbello is swabbing at 3,375 feet. The Orange Petroleum Co.'s No. 12 Chesson is going on the jack at 4,650 feet.

At Spindletop, the Hamm-Brechin Drilling Co.'s No. 2 Gladys is bailing at 700 feet and Weber King's No. 1 Henderson is waiting for a standard rig to pump.

The old Hockley saline dome in Harris County, 30 miles northwest of Houston, witnessed another abandonment of exploration work during the week. The Texas Co. quit No. 4 Warren Ranch there at 4,150 feet and No. 5 at 3,700 feet. The Hockley Dome has been the scene of intermittent wildcatting for 20 years, without developing any production. It is one of the highest of the Coastal saline uplifts. Practically all the major companies, many of the smaller corporations and several individual operators have all expended considerable money on and around the dome in a search for the elusive oil sand. The salt area has been about defined, but the shale area that surrounds these saline uplifts, either lying between the salt and the oil sands, or above the oil sands, is still undefined. The last two tests were to the north and west and far out from the salt.

The Rycade Petroleum Corp. abandoned No. 1 Weems on Hunting Bayou, Harris County, at 3,940 feet. The test was drilled to that depth in 50 days, making something of a record. The Rycade has evidently decided to curtail its wildcatting temporarily in the Coastal region and has laid off some 60 men, most of them in the geological and land departments. The company has wildcatted extensively for the past two years in the Coastal Plains Belt.

W. C. Moore abandoned No. 1 Bleke, northeast of Anahuac, Chambers County, at 1,500 feet. No. 2 is drilling around 300 feet. They are formation tests, drilled with a light gasoline rotary outfit.

South Louisiana

In the Vinton Pool, the Vinton Petroleum Co.'s No. 3 Gray is a 75-bbl. well at 2,375 feet. The Sun Pipe Line Co. is laying a 6-inch pipe line from the Vinton Pool to the intracoastal canal and will barge out accumulated stocks of the Vinton Petroleum Co. to the Sun Oil Co.'s tanks at Sabine Pass.

The Gulf Refining Co.'s No. 38 Star is drilling around 1,824 feet, and No. 48 G. N. G. is rigging to work over. The Texas Co.'s No. 1 Amos Gray is drilling below 3,415 feet and No. 1-C Gray is at 1,875 feet. The Vinton Petroleum Co.'s No. 16 Rescue is around 2,235 feet. The Edgerly Petroleum Co.'s No. 9 Vincent is drilling at 3,565 feet. Marrs-McLean's No. 8 Gray is around 1,655 feet.

In the Lockport district, near Lake Charles, Calcasieu Parish, some very deep holes are drilling, even for that district. The Vacuum Oil Co. and Gulf Refining Co.'s joint No. 1 Prien Lake is taking a core at 5,935 feet. The same interests' No. 3 Lock-Moore is in sandy shale at 5,735 feet. No. 1 Friedberg & Wolff is around 4,355 feet and casing was set in No. 2 Farquhar at 3,030 feet. No. 5 Miller is drilling at 4,108 feet. Oil and water lines are being laid to No. 6 Miller to start drilling. A trestle is being built over the marsh to reach No. 2 Bordages, a location. The Marland Oil Co. of Texas' No. 1 Phoenix is drilling around 5,450 feet. The Lockport district is an expensive spot in which to operate aside from the unusual depth of the holes. It is a marsh region and trestles and board walks must be laid to get to the locations.

In Iberia Parish, at Jefferson Island, the United Oil & Gas Co.'s No. 1 Salt Mine is drilling around 1,120 feet with No. 1 State land rigging to start drilling. The United Oil & Gas Syndicate has been operating about Jefferson Is-

(Continued on Page 117)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 12.—In the Turner Valley Field, southwest of Calgary, Royalite Oil Co.'s No. 4 naphtha gusher, Section 6-20-2w5, is now connected up with the 4-inch gasoline pipe line running direct from the field to the Imperial Oil, Ltd., refinery at Calgary, some 30 miles distant. October naphtha shipments from Royalite No. 4, before the pipe line was connected, show approximately 13,300 bbls. of 73 degrees naphtha shipped, a slight increase over the September shipments. Both the September and October shipments were down on account of the fact that the naphtha was taken out at that time in tank trucks and the roads were in bad condition, holding up transportation, so that the production accumulated in storage in the field. The November figures will not be a full criterion of the well's production either, as a considerable amount of the production was lost in connecting up the big well wtih the scrubbing plant and the new pipe line. There is, however, no decrease noticeable in either the rock pressure or the volume of gas, about 18,000,000 cubic feet a day, from the well, although it has been blowing for more than a year, since October 14, 1924.

Figures given by the Royalite Oil Co. for October show that the total naphtha shipments from the Turner Valley for that month were 473,425 gallons (imperial) of which about 27,700 gallons were from the extraction plant handling the wet gas output of the Nos. 1 and 2 wells, leaving a net of about 445,725 gallons shipped from No. 4. The production for the past few months is:

	Barrels
June	14,409
July	15,308
August	14,379
September	12,702
October	13,300

The year's production of 73 degrees crude naphtha from Royalite No. 4 will be greater than the entire crude petroleum production of Canada for the same period.

Reports from the Imperial Oil, Ltd., tests drilling throughout Alberta show that the Coalspur No. 2, in the northern foothills, 150 miles west of Edmonton, is down 3,985 feet and fishing for a bit lost in the hole. In the southern foothills, 35 miles west of Nanton, the Rice Creek test is down 4,025 feet with a 10-inch hole, and getting ready to set 8¼-inch casing at that depth. In the Jumping Pound district, 25 miles west of Calgary, a new test has been spotted, and drilling equipment is being moved in. Drilling will be started this winter. In the Turner Valley Field, Royalite Oil Co.'s No. 5 is down 2,525 feet and the rotary bit stuck in the hole a week ago has not yet been recovered. Royalite Oil Co. No. 6, also drilling with rotary, is down 2,170 feet and drilling. In the Sweetgrass district, the Imperial Oil, Ltd., Erickson Coulee test, Section 8-1-12w4, east of Coutts, is still moving in materials.

In the Turner Valley Field the Vulcan Oils, Ltd., test has finished dropping the 8-inch casing to 3,260 feet depth, and resumed drilling. Reports widely current that this well has come in are incorrect, and are due apparently to the fact that the oil encountered at 3,126 feet accumulated in the bottom of the hole and a considerable quantity was brought up in baling.

Irma-Wainwright

In the Irma-Wainwright Field, east central Alberta, the Anglo-Alberta Oil Co. has purchased surface rights on the northeast quarter Section 18-45-6w4. This location adjoining that of the British Petroleum, Ltd.'s, 3-B well, which has a reported production of 50 to 75

(Continued on Page 107)

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467

North Louisiana-Arkansas

By M. L. Vaughn

Dixie Oil Co.'s No. 53 Robertshaw, in Pine Island district, gets showing of 500 bbls. high-grade oil and 10,000,000 feet of gas. Better pay sand expected at lower level. Completion creates considerable excitement. Big gas well in Waskom Field. Urania area active. Old Caddo Field extended into Texas.

SHREVEPORT, La., Dec. 14.—The week just closed in the North Louisiana and Arkansas territory has been one of unusual activity. The main features of interest are the Dixie Oil Co.'s deep test in Pine Island, the new completions in Urania, the extension of the old Caddo Field into Marion County, Texas, the possibilities of Lafayette County, Arkansas, as a future field, the wells brought in from the Blossom sand in the Smackover and Norphlet district, and the Gulf Production Co.'s deep test in the Waskom gas field.

While activities generally have been greater this week, oil production in both Louisiana and Arkansas shows a decline. Fewer completions account for decrease in new production, and this week has registered more gas wells and more failures than the week before. In North Louisiana the decrease is due mainly to decline in Haynesville production, as Bellevue, Caddo light, Homer and Urania show a slight increase over the preceding week. The only increase in Arkansas is in the Stephens district, while all the other districts show decline. The daily average production in North Louisiana is 44,870 bbls., and for Arkansas 200,935 bbls., making a total for both States of 245,805 bbls., showing a decrease over last week of 7,370 bbls. The distribution is as follows:

North Louisiana	
Bellevue	2,410
Caddo, light	8,655
Caddo, heavy	2,445
Cotton Valley	3,850
DeSoto and Red River	3,380
Elm Grove	685
Haynesville	11,600
Homer	6,135
Urania	210
	44,870
Arkansas	
Smackover, heavy	168,985
Smackover, light	20,930
El Dorado	8,000
Nevada	1,285
Stephens	1,735
	200,935
Total both fields	245,805
Decrease	7,370

Pine Island Deep Test

The Dixie Oil Co.'s No. 53 Robertshaw in Pine Island district, which was brought in a year ago as a 350-bbl. well at 2,939 feet and which was considered at that time deep pay, was tested early in the week at a depth of about 3,700 feet and showed 6,000,000 feet of gas with a 50-bbl. spray of 43 gravity oil. The company went back into the well to seek the source of this oil. After deepening the well another test was made with a showing of 500 bbls. of oil and 10,000,000 feet of gas from around 3,747 feet.

This test has created more excitement among the oil men than has been experienced since the bringing in of the discovery well in the Homer Field. With the latest showing the company still feels that it is only in the top of the pay. The oil is reported to be a light green in color and claimed to be equal to the best Pennsylvania grades. In this well, as in other wells drilled in the Trinity, it has been the experience that no salt water is found below 2,400 feet. It is believed that better pay is still lower down and that the "basement" sand has not yet been discovered. The Dixie Oil Co. will continue making tests in the Pine Island district until it reaches a depth of 5,000 feet, with the hope of discovering the basement sand.

The Dixie Oil Co.'s No. 2 Jolly is reported drilling around the same depth as No. 53 Robertshaw, but it is believed it will go deeper in search of better pay before making a test.

The Palmer Corp.'s No. 1 Davis, in Section 23-21-10, Cotton Valley, is drilling ahead at 4,469 feet.

The Gulf Refining Co.'s No. C-18 Williams, in Section 31-13-11, DeSoto Parish, is drilling at 5,610 feet in hard black lime.

The old Caddo oil field was extended one-half mile west into Marion County, Texas, by Moffett and others' No. 1 Braden on the Tucker survey. Put on the beam at 2,387 feet it was reported to be pumping about 40 bbls. daily. The well is one-half mile west of Odell & Lawton's No. 2 Noll, which was recently brought in as a 250-bbl. well. Another producer in the old Caddo Pool, rated as a 75-bbl. well, and which is being deepened is Tremont Petroleum Co.'s No. 3 Mebane-Stiles from 2,346 feet.

Urania Active Area

Urania is probably the most active territory in North Louisiana. With a record of five wells in as many days, and new permits being issued, it is predicted that development will go forward without interruption so long as weather conditions remain favorable.

The Urania Petroleum Co. has shipped five cars of oil. It has still in storage 1,000 bbls. Zeigen and others have 1,800 bbls. which they are loading out. Rowe-Wallace have shipped 14 cars of oil, leaving 1,400 bbls. in storage. Ayers Brothers have 1,200 in storage. Their No. 1 Urania is now being standardized and it is thought it will produce 150 bbls. when placed on the beam.

Reports from Olla, La., have reached Shreveport to the effect that a wildcat in Caldwell Parish has run into a sand at 1,347 feet, and that 6-inch is being set for a test. The well is known as Potts & Prickett's No. 1 Goree, and is being drilled by the Sid Simmons Drilling Co. It is 1,100 feet south and 200 feet west of the northeast corner of the northeast quarter of the northeast quarter of Section 30-12-2e. It is located about 18 miles northeast of Urania production and is believed to have the same sand formation from which the Urania wells are producing, though it is found 125 feet higher.

The Crusader Oil Co. is pushing work on its Smackover-Vidalia pipe line and expects to have it completed by the end of January.

No. 1 Calhoun in 15-18-7, drilled by Hawks and others, is being reamed down to 835 feet to set 8½-inch casing. Pay is expected to be topped at about 1,390 feet.

The Benton Syndicate has a block of about 4,000 acres under lease in Bossier Parish. It is reported it has awarded a contract for the drilling of a well in 9-20-13 to be known as No. 1 Bulkley, drilling to begin about December 15.

Big Gas Producer

One of the largest wells in the Waskom gas district of Harrison County, Texas, brought in during the week is the Gulf Production Co.'s No. 1 Taylor on the Simpson Holloway survey, 2½ miles southwest of Wasko, making 19,000,000 feet of gas at 4,980 feet. This is the deepest test in east Texas.

Smackover and Norphlet districts, Arkansas, have brought in three wells from the Blossom sand, which is most encouraging, as at the present time there are nearly 100 rigs drilling 2,600-foot tests, and as many more operations are now in progress for the development of the third sand. Thurman Drilling Co.'s No. 7 Wilson, in Section 6-16-15, is reported to be flowing about 1,000 bbls. of pipe line oil per day. In the test made early in the week the well made a showing of 200 bbls. of oil and 8,000,000 feet of gas. It was then drilled several feet deeper with results as stated, and is now considered the best of the three wells brought in. The Natural Gas & Fuel Corp.'s No. B-5 Harrell, in Section 17-16-15, is making 600 bbls. daily, with no water. The Simms Oil Co.'s No. 7 Murphy, in the northeast corner of Section 29-15-15, is flowing 350 bbls. from a depth of 2,672 feet, with 1 per cent of water.

The Arkansas Fuel Co. has made another test of No. 1 Allen, in Section 18-19-24, Lafayette County, which showed 30 bbls. of oil and 400 bbls. of salt water from 2,785 feet on the beam, the oil testing 26 gravity. This is the first wildcat completion to show commercial production in the Shreveport district since the Urania Petroleum Co. tapped the Urania Field in La Salle and Winn Parishes with its No. 6 Urania in Section 18-10-2e, March 22, 1925, and the first in Arkansas since the opening of the Irma district, Nevada County, in 1923. The company has made two other locations to offset No. 1 Allen. These are No. 2 Allen, in Section 19-19-24, and No. 1 Red River Lumber Co., in Section 18-19-24.

The Humble Oil & Refining Co. had a show of oil in No. 1 Reed, in Section 16-15-22, Columbia County, with no sign of salt water, at around 2,700 feet. While it was bailing the well salt water broke in from above. It is believed this came from a water sand encountered around 1,600 feet. It will attempt to shut off the water and resume bailing.

A purchase of a one-thirty-second royalty on 160 acres in Section 6-16-15, Smackover district, for $17,500 has been reported this week. This royalty interest is in a lease on which there are 19 producing wells from the Nacatoch, Graves and Blossom sands, at the rate of 1,800 bbls. per day.

The State Land Office has advertised that on December 15, at Baton Rouge, bids will be received for leases on mineral rights in Cameron, Parish in the bed of Lake Misere; in Calcasieu Parish for a portion of the bed of Big Bayou or Old River crossing, and in the same parish for a portion of the bed of English Bayou. All bids are to offer a cash bonus and annual rentals of 50 per cent of the cash bonus for a period not exceeding four years.

A total of 19 permits were issued by the Department of Conservation in Arkansas during the week, and of these only eight were for new drilling. Six permits were issued to Edwin M. Jones for deepening wells on the J. Murphy lands, while five wells were abandoned in Union County. Only two permits were issued for Ouachita County operations, these being for new wells. All others covered Union County operations.

American Petroleum Corp. of Tulsa has derrick up for a wildcat test in the southwest corner of the southeast quarter of Section 3-11-8, near Campti, La., and will start drilling as soon as machinery arrives and can be set up. A. M. Bass is in charge of the work and 11 men will be employed, working in night and day shifts.

The announced intention of J. Smylie K. Herkness, ink manufacturer of Pydal, Pa., to contest the right of the State Department of Conservation to stop the erection of a carbon black plant in the Monroe gas field will be met by the State in vigorous terms, Dr. V. K. Irions, conservation commissioner, announced today. The Herkness company has announced that it will ignore the refusal of Commissioner Irions to grant a permit and will proceed to built its plant.

Test Hempstead County

Two Shreveport men have started a test in wildcat territory in Hempstead County, Arkansas. The test is to be drilled in Section 29-21-23, 4½ miles east of Home, and was spudded on December 20. The contract calls for a depth of 2,900 feet and the location is in what is known as the Rocky Mound territory, and is a half mile northeast of the Henry well, which was completed in 1921, in which splendid showings of both oil and gas were had.

The Winn Parish police jury met on Tuesday, December 7, and drafted formal resolutions asking the Louisiana Highway Commission to immediately let contract for completion of the Winnfield-Olla State highway. This road is now completed 6 miles east of Winnfield and 3 miles west of Olla. The uncompleted gap between Olla and Winnfield is about 10 miles long. Winn Parish has had its share of the cost available and turned over to the highway commission for the construction of this road since 1920.

Since the development of the Urania oil field 18 miles east of Winnfield, no road is needed more than the east end of the Winn Parish section of the Lone

East Central Texas

By Special Correspondent

CORSICANA, Tex., Dec. 12.—Kaufman County has another dry hole. Cranfill & Griffiths have abandoned their No. 1 Mook, Ables survey, at a total depth of 3,337 feet. The Austin chalk was penetrated at 2,275-2,752 feet. No oil or gas showed at any depth.

This leaves one test in Kaufman County, J. D. Harper's No. 1 Williamson, Crane survey, which was last reported at a total depth of 2,000 feet.

In Limestone County, the Magnolia Petroleum Co. has made a location for No. 1 Williams on the Varela survey, in the Groesbeck district.

In Navarro County, the Farish, Watts & Collins' No. 4-A Cerf, J. Smith survey, Powell Field, was shut down at 2,973 feet. The crew was unable to cement casing and it may be abandoned. The Roxana Petroleum Corp. has a 20-bbl. shallow sand well in No. 4 Bailey; the Tidal Oil Co. completed a 3-bbl. and a 25-bbl. well in No. 2 G. H. Kent and No. 9 Thompson, both shallow sand producers. There are only 7 wells classified as drilling in Navarro County and of these 3 are shut down. The Carrita Oil & Gas Co. tested salt water at 2,836 feet in its wildcat test, No. 1 J. Slime, Donaldson survey. Gilbert Johnson was coring at 2,975 feet in No. 1 Greer, Rushian survey. McDonald Brothers are rigged up on No. 2 McClelland, Ritchell survey.

Very little activity is apparent in the East Central Texas territory and the trade is at a loss to know where to turn to for new production.

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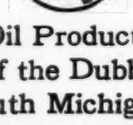

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Star Trail to Olla. Realizing that there may be a continued delay by the highway commission in finishing this 10-mile gap, the police jury made an appropriation to immediately put in shape the Winnfield Tullos road from Colgrade to Love Brothers well at Tullos bridge on Castor Bayou.

Union County—Completions

Operations of the week ending December 9 resulted in the completion of six wells in Union County of which three were gas wells, the others dry holes.

Federal Petroleum Co. completed No. 5 Flenniken, Section 6-16-15, making 2,000,000 feet of dry gas with 30 bbls. of oil at 2,560 feet.

Gulf Refining Co. tested salt water and abandoned No. 1 Howard, Section 13-16-16, at 2,780 feet.

Natural Gas & Petroleum Co. completed No. C-3 Lawton, Section 10-16-15, making 20,000,000 feet of dry gas at 2,711 feet, and No. D-3 Murphy, Section 8-16-15, making 43,000,000 feet of gas at 2,678 feet.

Snowden & McSweeney abandoned No. 1 McGraw, Section 1-16-17, with casing in hole at 2,608 feet.

The Texas Co. abandoned No. 1 McGraw, Section 12-16-17, at 2,780 feet.

Ouachita County

Arkansas Drilling Co. tested salt water and abandoned No. 1 Turnage, Section 34-15-16, at 2,030 feet.

J. E. Crosbie abandoned No. 12 Berry, Section 33-15-15, at 3,271 feet.

Gulf Refining Co. completed No. A-18 Umsted, Section 33-15-15, making 25,000,000 feet of gas with spray of salt water at 2,695 feet.

Houston Oil Co. completed No. 11 Laney, Section 31-15-15, flowing 150 bbls. at 2,568 feet.

Humble Oil & Refining Co. abandoned No. 1 B. Goodwin, Section 22-15-17, at 2,451 feet.

The Texas Co. completed No. 16 Berry, Section 33-15-15, pumping 85 bbls. at 2,426 feet, and No. 8 Johnson, Section 34-15-15, pumping 75 bbls. at 2,548 feet.

Buffalo Oil Co. completed No. 1 Cult, Section 22-15-19, making 15,000,000 feet of gas at 1,542 feet, this well being in the Stephens Field.

Wildcat Completions

Bossier Parish—The Texas Co. completed No. 1 Henry Rose, Section 31-23-11, making 43,000,000 feet of gas at 2,680 feet.

Caddo Parish — Dixie Oil Co. completed No. 2 Worley, Section 23-22-15, pumping 2 bbls. at 1,082 feet; D. C. Richardson completed No. 2 Youree-Randolph, Section 13-20-15, making 500,000 feet of gas at 793 feet. The Texas Co. completed No. 17 Raines, Section 15-21-15, making 5 bbls. at 1,828 feet, in the Pine Island district.

LaSalle Parish—Cleve Love completed No. 1 Doty, Section 36-10-1e, flowing 50 bbls. at 1,509 feet.

Red River Parish—Fortuna Oil Co. completed No. 35 Continental Polly, Section 7-12-10, pumping 35 bbls. at 2,810 feet.

Calhoun County, Ark. — Jerrell and others abandoned No. 1 Freeman Smith Lumber Co., Section 35-15-13, at 3,008 feet.

LaFayette County—Arkansas Fuel Oil Co. completed No. 1 Allen, Section 18-19-24, pumping 20 bbls. of oil and 250 bbls. of salt water at 2,786 feet.

Nevada County—Autrey Oil Co. completed No. 1 McKinney, Section 10-14-21, pumping 10 bbls. of oil and 300 bbls. of salt water at 1,250 feet. Smitherman-McDonald took derrick down and abandoned location for No. 6 McKinney, Section 10-14-21. Steele and others abandoned No. 1 Wallace, Section 11-14-21, at 1,236 feet.

Union County—Drilling

The slump in drilling operations in the Arkansas oil fields continued during the week ending December 9, according to the weekly report of the Department of Conservation and Inspection. Officials say that it is unlikely that there will be any great increase before spring unless some operator brings in a big well in unproven territory.

As a result of the past week's work Union County has 11 wells waiting for standard rig to pump, 6 wells temporarily abandoned, 8 rigging up, 13 derricks, with 97 drilling wells.

Amerada Petroleum Corp. has shut down and is waiting orders at 2,367 feet in No. 5 Calloway, Section 4-16-15; Anderson and others have junked and are waiting orders at 2,460 feet in No. 2 Murphy, Section 15-16-15.

Broderick & Calvert are drilling at 1,700 feet in No. 4 Bradford, Section 8-16-15; Carnahan and others, drilling in sandy rock at 2,558 feet in No. 1 Coombs, Section 24-18-16; Crawford & Sebastian set 12-inch at 312 feet, drilling at 763 feet in No. 10 James, Section 8-16-15; Crown Central Petroleum Co. has derrick up for No. 7 Murphy, Section 8-16-15, formerly reported as United Central Oil Corp.'s No. 7 Murphy.

Rowe Daniels set 10-inch at 302 feet, drilling at 827 feet in No. A-1 Tatum, Section 7-16-15; waiting for standard rig to pump in 1,200 feet of fluid, 2 feet of sand, cemented 6⅝-inch at 2,398 feet, down 2,400 feet in No. 7 Tatum, Section 7-16-15; cemented 6-inch at 2,432 feet in No. 8 Tatum, same section. Ferguson Drilling Co. is drilling at 2,625 feet in No. 1 Howard, Section 7-16-16.

Grimes & Jones are blowing to test in 12 feet of sand at 2,204 feet in No. 1 J. A. Rowland, Section 5-18-14. Gulf Refining Co. is drilling at 2,110 feet in No. 5 Primm, Section 1-16-16; set 10-inch at 2[illegible]7 feet in No. 44 Werner, Section 6-16-16.

Harrell, trustee, set 10-inch at 60 feet in No. 1 Carroll, Section 7-16-16; Hickman and others began second hole and set 12-inch at 400 feet in No. 12 Graves, Section 3-16-15. F. C. Henderson is waiting orders at 2,760 feet in No. 2 Smith, Section 18-16-15. Hollifield and others are drilling at 2,018 feet in No. 3-A Giller, Section 10-16-15. Howell & Knowles are setting 12-inch at 82 feet in No. 1 Springer, Section 36-17-18.

Humble Oil & Refining Co. is rigging up to drill No. 5 Giller, Section 15-16-15.

E. M. Jones is drilling at 100 feet in No. 5 Cook, Section 16-15-15; tested salt water at 2,647 feet, arranging to set 3-inch O. D. liner in No. 3 Cook, same section; arranging to set 5-inch at 2,617 feet in No. 2 Lawton, Section 10-16-15; has derrick up for No. 3 Lawton, same section; drilling at 2,305 feet in No. 1 Murphy, Section 17-16-15; cemented short string 4-inch at 2,474 feet in No. 2 Murphy, same section; drilling at 1,355 feet in No. 3 Murphy, same section; arranging to deepen No. 4 Murphy, formerly completed flowing 500 bbls. at 2,523 feet as Barnsdale & Foster's No. 4 Murphy, also arranging to deepen No. 5 Murphy, formerly completed, swabbing 150 bbls. at 2,113 feet, as Barnsdale & Foster's No. 5 Murphy.

Keene & Woolf are waiting for standard rig to pump in 1,000 feet of oil and 1 foot of sand at 2,679 feet in No. 2 Hinshaw, Section 17-16-15. W. R. Keever is arranging to deepen No. 3 Sanford, Section 17-16-15, which was formerly completed blowing 400 bbls., 95 per cent salt water, as Penguin Oil Co.'s No. 3 Sanford, at 2,505 feet; rigging up to drill No. 4 Sanford, same section. Kennebrew and others are waiting for standard rig to pump in 1,200 feet of oil, 42 feet of broken sand, drilling at 2,555 feet.

Other Union Operations

Laurel Oil & Gas Co. set 12-inch at 158 feet, drilling at 1,200 feet in No. 5 Tatum, Section 7-16-15. Liberty Oil Co. has shut down and is waiting for drill stem at 2,000 feet in No. 2 Davis, Section 31-16-14.

Lion Oil & Refining Co. is drilling at 2,093 feet in No. C-4 Bilyew, Section 8-16-15; set 6-inch at 2,454 feet in No. 9 Graves, Section 3-16-15; waiting for standard rig to pump in 1,500 feet of oil, 9 feet of sand at 2,461 feet in No. A-7 Murphy, Section 7-16-15; cemented 6-inch at 2,572 feet, drilling at 2,575 feet in No. A-12 Murphy, same section; setting 6-inch at 2,461 feet in No. C-11 Murphy, Section 8-16-15; waiting for standard rig to pump in 1,500 feet of oil and 6 feet of sand, set 6-inch at 2,471 feet, drilling at 2,477 feet (corrected depth), No. G-5 Murphy, same section. Little Fay Oil Co. set 6-inch at 2,622 feet in No. 4 Harrell, Section 17-16-15. J. S. Lyell is waiting for casing at 2,618 feet in No. 11 Fee, Section 3-16-15.

Magnolia Petroleum Co. set 6-inch at 2,546 feet in No. 8 Hatfield, Section 7-16-15; cemented 6-inch at 2,549 feet in No. 9 Hatfield, same section; waiting for standard rig to pump in 1,200 feet of oil, 3 feet of sand at 2,604 feet in No. 2 Hisseler, Section 8-16-16.

Magnolia Petroleum Co. is drilling at 2,070 feet in No. 3 N. J. Scott, Section 12-16-17. Marine Oil Co. is coring at 2,401 feet in No. B-5 Murphy, Section 15-16-15; Pat Marr cemented 6-inch at 2,930 feet in No. 1 Moody, Section 16-17-14; Murdock and others are arranging to test in 10 feet of sand at 2,366 feet in No. 7 Hays, Section 4-16-15; Murphy Oil & Gas Co. is blowing to test in 7 feet of sand at 2,422 feet in No. 8 T. C. Murphy, Section 9-16-15.

Natural Gas & Petroleum Co. set 6-inch at 2,665 feet, drilling plug in No. B-5 Harrell, Section 17-16-15; drilling at 98 feet in No. 5 Ballard, Section 15-16-15; drilling at 200 feet in No. B-5 Murphy, Section 17-16-15.

Ohio Oil Co. set 4-inch at 2,642 feet, drilling plug in No. 12 Pate, Section 10-16-15. G. N. Pace has shut down and is waiting orders at 2,335 feet in No. 1 Barnett, Section 11-16-18. Penguin Oil Co. has 4-inch stuck and cemented at 2,570 feet, drilling at 2,572 feet in No. 6 McDonald, Section 1-16-16. Phillips Petroleum Co. is drilling at 2,510 feet in No. 5 Alphin, Section 11-16-15; drilling at 2,680 feet in No. 2 Thompson, Section 7-16-15.

Pure Oil Co. set 6-inch and tested salt water at 2,556 feet, cemented 4-inch at 2,557 feet in No. 7 Merriwether, Section 6-16-15. Raines and others cemented 6-inch at 2,056 feet, down 2,070 feet in No. 1 Dumas, Section 9-17-16. A. H. Ramage has junked and is arranging to

(Continued on Page 112)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Dec. 11.—Twenty-one well completions, 15 of which were failures and 6 were producers, sums the field operations of last week. The most important completion in the group from the viewpoint of production was Mexican Eagle Oil Co.'s No. 30-A Cerro Veijo, in the South Fields, which is given a potential rating of 35,000 bbls. at a sub-sea level depth of 1,980 feet, as already reported. Mexican Eagle also had a small completion down in the old Furbero Field, its No. 35 there being a 250-bbl. pumper at a sub-sea level of 1,905 feet, the drill tapping the pay in the igneous formation peculiar to that pool. Incidentally, that is about the only pool within Tampico-Tuxpam jurisdiction in which wells are pumped at all. (An exception might be noted in the case of the Mexican Eagle's old Tanhuijo Pool a few years ago.) The Furbero oil is around 28 degrees Baume.

The other pay completions are in the Northern Fields. National Lines led off with another right-of-way well, No. 21 Chapacao, finished at 2,170 feet, rated good for 15,000 bbls. Sol Oil Co.'s No. 5 Tamusol, Federal zone, in the Tampuche district of the Panuco Field, is good for 2,000 bbls. at 2,246 feet. The surprise well of the week, however, is La Corona Petroleum Co.'s No. 17, Lot 6 Corcovado, rated good for 3,000 bbls. at 1,903 feet. This Lot 6 Corcovado has produced for the Corona people, in its part of it, 11 failures and one very small producer, hence the element of surprise. East Coast Oil Co.'s No. 452 Ingenio, Panuco, is rated 100 bbls. at 1,945 feet.

The Failures

The failures follow: In the Panuco Field: Credito Petrolero's No. 4 Piedras is a dry hole at 2,354 feet. Mexican Sinclair Oil Corp.'s No. 9 Gonzales, after looking like a 2,000-bbl. well, developed salt water with the oil and will be plugged; its No. 8 Zurita and No. 11 Gutierrez are both dry holes at 2,224 and 2,125 feet, respectively. New England Fuel Oil Co.'s No. 19 Piazzi is a duster at 2,100 feet. Transcontinental Petroleum Co.'s No. 6 Piedras drilled into salt water at 2,000 feet. In Cacalilao: International Petroleum Co.'s No. 237, Lot 5, drilled into salt water at 2,250 feet; its No. 248 did the same at 2,245 feet, and No. 249 is a dry hole at 2,250 feet. Up in Corcovado, Cosmos Oil Co.'s No. 41, Lot G, finished a duster at 2,025 feet. In the Ebano sector, Mexican Petroleum Co.'s No. 45 Chapacao and No. 4 Midway are both dry holes at 2,465 and 2,530 feet, respectively. Mexican Gulf Oil Co.'s No. 22 is a dry hole at 2,340 feet.

South of the Tuxpam River, in the South Fields, Mexican Sinclair Petroleum Corp.'s No. 5 San Isidro finished a failure at 3,050 feet. Mexican Eagle Oil Co. abandoned its No. 21 Cerro Veijo for a dry hole at a sub-sea level of 1,915 feet.

The Department of Industry, Commerce and Labor, through the Department of Petroleum, has issued orders to regulate the production of wells in the Republic, seeking, it is alleged, to conserve in a practical manner the oil underground from extravagant exploitation in the case of competitive exploitation, or from extravagant exploitation even in cases where there is no competitive withdrawals.

Wherefore the opening paragraph of the order continues: "It has been deemed pertinent to establish, within general lines, the percentage to which petroleum producing wells should be exploited, fixing for the present that the relations to govern the exploitation in the future should be as follows:

"Wells of a production of 1,000 bbls. or less per day shall be allowed to be exploited to their total capacity.

"Wells from 1,000 to 5,000 bbls. daily production shall not be allowed to be expoited to more than 65 per cent of their productive capacity.

"Wells from 5,000 bbls. to 10,000 bbls. daily production shall not be allowed to be exploited to more than 60 per cent of their productive capacity.

"Wells from 10,000 to 20,000 bbls. daily production shall not be allowed to be exploited to more than 50 per cent ot their productive capacity.

"Wells of more than 20,000 bbls. daily production shall not be allowed to be exploited to more than 40 per cent of their productive capacity."

Continuing, the order says:

"It is obviously understood that these proportions are those which should govern exploitation in the cases in which salt water does not appear, but when this happens, the exploitation of each well shall be decreased so that the proportion of salt water and sediment shall not exceed 5 per cent, and in those cases in which the proportion of salt water becomes greater, the Department of Industry, Commerce and Labor shall determine the proportion at which wells should be exploited."

It is further stated that the regulations set forth are established on a temporary basis at this time until it may be possible to work out a more definite basis for their establishment; and inspectors in the field are instructed to make practical observations based on the foregoing to this end. It is further ordered: "The petroleum agencies shall proceed to make a measurement of each well for a period which may be of one or two hours as a maximum after the well has come in and been allowed to clean itself properly, and this period shall be according to the judgment of the inspector who checks its capacity * * *."

Drilling in Panuco

In the Panuco Field drilling operations at the week-end are best reflected as fol-

(Continued on Page 71)

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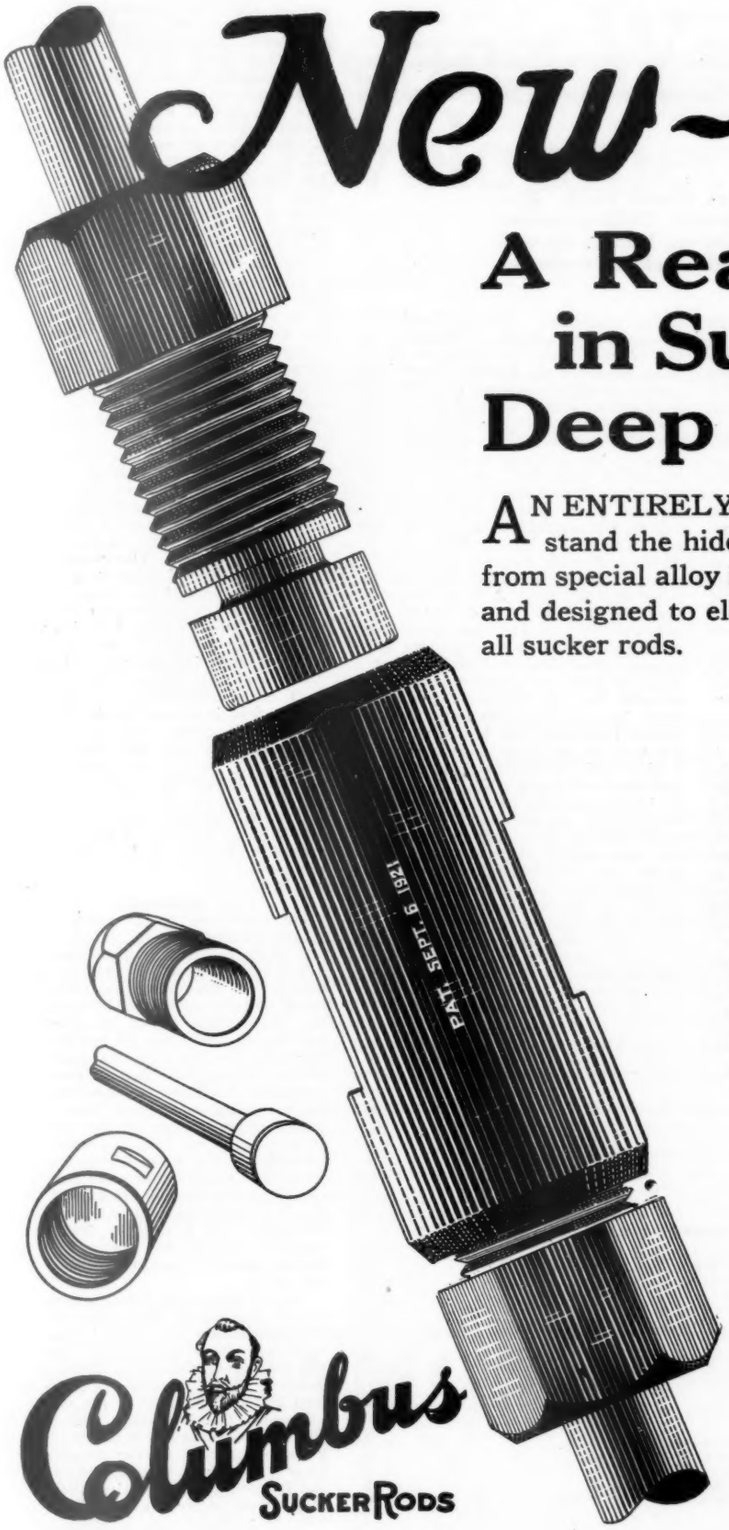

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California Field Operations

By L. P. Stockman

Associated Oil Co. completes 4,000-bbl. well in Ventura Avenue Field. Marland gets good oil showing in 20 feet of sand at Seal Beach. Drilling increasing in Long Beach extension, where recent producers are holding up well. Union Oil Co. gets good well in Rosecrans Field. No new work at Dominguez.

LOS ANGELES, Calif., Dec. 12.—The principal development in California consists of a slight decline in production at Inglewood and Rosecrans. Long Beach, on the other hand, due to recent completions in the northwest extension and the return to production of three producers temporarily off production, showed a slight increase. The Ventura Avenue Field and other districts throughout the State showed comparatively no change. Drilling in the Long Beach extension, that area north of Wardlo wand west of American Avenue, is increasing quite rapidly, new rigs going up at the rate of from five to ten each week. This average, of course, will not be maintained indefinitely, but in view of the fact that there are still plenty of locations available, it should be maintained for another 30 days at least. Actual count shows 78 rigs north of Wardlow and west of American Avenue and six derricks under construction. Actual spuds were made during the week by Tom Bailes, Fred B. Foster Co., Franklin, Andrews & Zellers, Henderson Petroleum, S. L. Johnston, McAlpine, Craig & Wilbur, McKeon Drilling Co. and Wheeler & O'Brien.

The Associated Oil Co. brought in its No. 22 Lloyd in the Ventura Avenue Field and the well is making 4,000 bbls. and 2,000,000 feet of wet gas from 5,340 feet.

A. J. Delaney finished his second producer in the Long Beach extension and got a 420-bbl. well, the oil testing 21.8 degrees and showing a cut of 1 per cent. Delaney's latest addition, No. 2 Long Beach, which is flowing through a 7/8-inch bean under a pressure of 450 pounds, was carried down to 4,387 feet and finished with a 4¾-inch liner carrying 65 feet of shop perforated. Delaney is pushing his development work ahead quite rapidly and, barring mechanical trouble, should have another well on production within the next two weeks. This is his No. 3 Long Beach, now at 4,340 feet. The balance of his present drilling program consists of two other wells, Nos. 4 and 5, and rigs going up for Nos. 6, 7, 8, 9, 10, 11 and 12. Although most of the drilling at Long Beach is in the extension, there is still some little work being done in the older section of the field. This is evidenced by the recent completion of No. 7 Union Pacific by the Pan American. It only turned out to be a small pumper, making 102 bbls. on the beam, but the oil was of a good grade, testing 25.3 degrees. The hole was carried down to 4,765 feet and finished with a 6¼-inch oil string carrying 1,340 feet of 60 mesh screen.

Big Well Holding Up

The Kahlbush & Johnston well, which blew in last week, is on steady production and averaged a little better than 1,100 bbls. daily during the past seven days. An individual check of present operations in the extension indicates that completions can be expected on some 10 or 12 wells during the next two weeks and that additional producers can be expected in regularly for sometime thereafter. As a matter of fact, if the amount of drilling keeps on increasing from day to day as it has done during the past month, development work will continue well into the summer. One of the most interesting developments at Long Beach this week is the leasing of the exclusive Country Club property by the Pacific Oil Co. This lease, located in the northern part of the extension and consisting of 160 acres, was originally held by the Shell, but quit claimed about a year ago following an unsuccessful attempt to develop production. The Shell's well was apparently too far northeast, in view of recent developments. The Pacific's geological staff is of the opinion that the west half has possibilities, since it is in a direct line with present development, but the company will not drill until developments warrant. The Country Club is sitting on top of the world whether oil is found or not as it cost the Shell a cash bonus of $150,000 and the Pacific $75,000 for the privilege of drilling. The latter has taken a lease on only the westerly 60 acres and will not be obliged to drill within two years unless oil is found sooner within 500 feet of the property lines. In the event that production is developed the Country Club will receive one-sixth of any oil or gas produced. The importance of this deal lies in the fact that the Pacific is of the opinion that the productive limits of the field may be pushed out even beyond this point. Of course, it is still a long shot, but the company will be well protected if this happens. The Shell's test on this property, which was put down near the fifteenth tee, was abandoned about a year ago as a duster, not even so much as a color being found from the grass roots down to 6,000 feet.

Near Completions

During the next week or 10 days the Barry Oil Co. should finish its No. 1 as the bit is now going ahead in the oil sand at 4,362 feet. The company's No. 2 has just passed the 4,000-foot level and will be due in the week following the initial completion. The California Petroleum should add No. 17 Fields to its list of producers and, although No. 4 Long Beach of the Coombs Trust is at present standing cemented at 4,229 feet, it should be drilled out and put on production shortly. Featherstone & Preston have two immediate potential producers in No. 9-A, now at 4,500 feet, and No. 11 at 4,475 feet. No. 12 is standing cemented at 4,209 feet and, although material is on ground for Nos. 13, 14 and 15, rig construction has not yet gotten under way. Nathan Hale and the McKeon Drilling Co. are both in the pay, the former at 4,360 feet and the latter at 4,531 feet. J. E. O'Donnell is preparing to finish Nos. 46 and 47 and, although No. 48 has just passed the 4,000-foot level, it is coming along quite rapidly. The Ibbeston Petroleum lost a string of drill pipe in No. 4 Long Beach at 4,050 feet, but has No. 5 just about ready for a test at 4,460 feet. The McMillan Petroleum also has a nice looking well in No. 4 at 4,380 feet. No. 1 Shreve of the Sandburg at 4,340 feet and Tehriot & Young's No. 1 Long Beach at 4,372 feet round out the list of early completions. In addition to these tests, there are 14 more nearing the 4,100-foot level and 16 which have just passed 3,500 feet. The formation in this area is conducive to rapid drilling and as a result the depths change very quickly. One of the most remarkable features in connection with this development work is the comparative absence of mechanical trouble. At the present time only five drillers are being held up, the delay in each case being due to twist-offs.

Rosecrans

The Union finished an excellent well on the Howard Park property at Rosecrans during the week and has another just about ready to be given a try. The company's latest acquisition was No. 25, a north line well finished in the upper zone at 4,225 feet, which came in flowing 492 bbls. of 33.1 gravity oil, cutting 2 per cent. The completion of this hole leaves the Union with but three more drilling projects in the northern part of the lease and, since no new locations have been staked during the past few weeks, it looks as though the company will ease up a bit as soon as these offsets have been drilled into completion. The Union has been carrying a rather heavy burden in this area and is entitled to a little respite as soon as the number of offset wells necessary to prevent drainage have been finished. Of course, a certain number of strings will be kept in operation, but it will undoubtedly be to the benefit of all concerned if the oil can be kept under ground and free from drainage pending the return to normalcy. The company is only working with one test on its Trust lease, No. 4, at 5,674 feet. This test has shown up quite favorably of late and if a shut off is secured an early production test will be made.

The Associated has started reconstructing the rig for No. 1 Hoge destroyed sometime ago by fire. The test has been standing suspended at 5,004 feet and it is understood the company will carry it down a little deeper in an effort to develop production. The property lies in the extreme southern part of the field and really cannot be condemned in its present state. The California Petroleum is resuming work on No. 1 Kreitz, which came in as a good well several months ago from 4,500 feet and will add around 250 feet of hole. George F. Getty finished one of the best wells completed in this field in several weeks when his No. 2-A was given a test at 5,245 feet. The initial flow was 960 bbls. of clean 34.6 gravity oil. It had been expected that the Marine Oil Corp. would test out either its No. 36 Athens or No. 39, but preliminary work had not yet been completed at the close of the week. As a result it is believed that the company will make a test of both within the next few days.

Inglewood

The three new wells started recently by the Standard Oil Co. in the eastern part of its Los Angeles Investment lease No. 1 at Inglewood has resulted in the drilling of three west line offsets by Pacific Oil Co. on the Baldwin property. No. 13 Baldwin offsets the Standard's well No. 35, while Nos. 14 and 15 on the Baldwin lease offset the Standard's Nos. 36 and 37 on Los Angeles Investment Lease No. 1. These six holes are going down together and, since they are in proven territory, they should come into production almost simultaneously. One recompletion was listed during the week, the well in question being the Standard's No. 16 on Los Angeles Investment Lease No. 1, a north line well and an offset to the Shell's No. 6 Rindge. No oil was secured, however, but the well is producing approximately 1,000,000 feet of wet gas.

No new work of any kind is being done in the Dominguez Field and the only thing of interest this week in that area is the abandonment of No. 1 Susana by the Henderson Petroleum Corp. in the northern part of the field and No. 7 Marland of the Dominguez in the southeastern end. The Henderson well was an offset to the Shell company's Manuel lease, but it was off the structure and no production was secured. The Henderson Petroleum Corp. acquired the Susana lease shortly after the Shell secured its Manuel property and, although it was known to be a long shot, the company figured that there might be room for at least two wells. No. 7 Dominguez of the Marland in the southern part of the field was selected by the company for a deep test and, although it was carried down to 6,300 feet, commercial production was not secured. A little showing found at 5,500 feet, however, leads those familiar with conditions in the field to believe that there is a deeper horizon in the center of the field. Development

(Continued on Page 107)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Antietam, November 30, New York, fuel	75,667
Paulsboro, November 30, Philadelphia, fuel	75,217
William G. Warden, November 30, Charleston, crude	103,466
Bohemian Club, December 2, Philadelphia, refined	82,951
Illinois, December 2, Boston, refined	75,493
Swiftscout, December 6, Fall River, crude	78,997
Coastwise	
Liebre, November 30, Everett, fuel	75,628
Captain A. F. Lucas, November 30, Seattle, refined	30,937
D. G. Scofield, November 30, Richmond, crude	77,680
La Purisima, December 1, San Diego, refined	32,153
Richmond, December 1, Richmond, crude	64,314
Cathwood, December 2, Martinez, crude	75,017
S. C. T. Dodd, December 2, Point Wells, refined	76,187
Los Alamos, December 2, Seattle, refined	39,493
W. S. Miller, December 3, Richmond, crude	74,144
D. G. Scofield, December 4, Richmond, crude	73,816
Los Angeles, December 4, Martinez, crude	72,113
La Purisima, December 4, Portland, refined	36,370
Frank G. Drum, December 4, Avon, crude	73,817
Mojave, December 5, Seattle, fuel	72,080
Richmond, December 4, Richmond, crude	62,946
Deroche, December 5, Martinez, crude	74,033
K. R. Kingsbury, December 6, Richmond, crude	83,827
R. J. Hanna, December 6, Portland, refined	74,096
Cathwood, December 6, Martinez, crude	75,823
Exports	
Manju Maru (Jap.), November 30, Japan, crude	60,147
Argyll (Fr.), November 30, Mexico, fuel	35,096
San Fernando (Br.), November 30, Buenos Aires, fuel	106,932
Tahchee (Br.), December 1, China, refined	66,591
San Patricio (Br.), December 2, Chile, fuel	110,596
Tulsagas, December 3, Chile, fuel	72,070
W. C. Teagle, December 3, Balboa, fuel	108,315
F. H. Hillman, December 5, London, refined	112,954
From Ventura	
Betterton, December 2, Avon, crude	81,234
Betterton, December 6, Avon, crude	80,929
From Port San Luis	
Utacarbon, December 1, Balboa, fuel	77,915
From San Francisco	
Yankie Arrow, December 3, China, refined	98,346
Warwick, December 3, Portland, refined	39,256
El Segundo, December 3, Eureka, refined	30,829
Frank H. Buck, December 4, Seattle, fuel	63,084
Alaska Standard, December 4, Eureka, refined	12,921
Lebec, December 5, Portland, fuel	68,144

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Rocky Mountain Area

By Frank B. Taylor

Midwest Refining Co. and Utah Southern Oil Co. get well 12 miles south of Moab, Utah, which is making about 350 bbls. of high-grade oil. Test in Fort Collins Field, Colorado, on top of Muddy Sand and large gas well is expected. Ohio Oil Co.'s well in Lance Creek Field results in increased output there.

CASPER, Wyo., Dec. 14.—The Midwest Refining Co. and the Utah Southern Oil Co., drilling a joint wildcat on Section 6-27-21, 12 miles south of Moab, Utah, struck a flow of gas and oil at 2,030 feet and the well blew itself in and caught fire. The blaze was extinguished soon and the well was reported as making 300 bbls. of oil and 2,000,000 feet of gas before drilling into the main pay sand.

From 1,990 feet to 2,028 feet a sandy lime was passed through, with shale in layers, and this is the source of the present production. It is believed to lie immediately above the main pay.

Directly above this oil saturation the well passed through 150 feet of salt. The surface exposure at Cane Creek is Pennsylvania and the well is still bottomed in that formation.

When the fire was burning it is now estimated that the well was making 150 bbls. daily. It was then flowing by heads every 20 to 40 minutes, shooting the oil 400 to 500 feet in the air.

After the fire was put out the flow began to increase and is continuing to do so, the present rate being estimated at 300 bbls. daily.

The fire was put out by means of a fire hose borrowed from Moab. The well is only a few feet from the banks of the Colorado River, at the base of the precipitous Orange cliffs that constitute the beginning of the gorge which farther toward the Pacific develops into Grand Canon. The only means of reaching the location is by boat from Moab, and all material has to be brought down on scow.

A new rig, to replace the one destroyed by fire, is being shipped to the location and tankage is being assembled and will be sent in as quickly as possible.

The limited space at the well, with the Colorado River only a few feet away on one side and the Orange cliffs rising 1,300 feet almost vertically on the other, makes it impossible to impound the oil in open earth dams. Therefore tankage will have to be erected before a flow test of the new discovery can be made.

It is believed that a tank line outlet will be simple, by boosting the oil 1,300 feet to the top of the Orange cliffs, if it will not rise that high by its own pressure, and then allowing it to travel through a 15-mile line by gravity to the Denver & Rio Grande Western Railroad.

The oil is 38 gravity and it is believed that when the well is drilled into the pay the pressure will lift the flow to the top of the cliffs. Cementing is to be done for the entire depth between the 10 and 12-inch casing, to stop all leakage there.

On Cane Creek Structure

This wildcat is located on what is known as the Cane Creek structure and is the first test ever drilled there. The strike was made in the Pennsylvania formation which lies below the Cretaceous that carries the main oil bearing sands of this region. The Midwest Refining Co. has a large gasser at Cisco, but this gas comes from the Dakota sand at the bottom of the Cretaceous.

The Utah structures were given up as worthless three years ago after the Ohio Oil Co., the Carter Oil Co. and the Midwest Refining Co. had drilled dry holes on several structures. The Midwest and Ohio Companies have again entered the State at different points and are drilling wells on some new structures. The Midwest recently completed a dry hole on a very good appearing structure at Carbonera.

Shipments of crude from the LaBarge Field in Lincoln County, in the southwest part of Wyoming, are being made regularly from Susie, the loading station on the Oregon Short Line. This oil is hauled from the field by tank trucks and delivered to the loading rack tank at the railroad. The crude is shipped to the Utah Oil & Refining Co.'s refinery at Salt Lake.

The shipments average 1,500 bbls. weekly at present and four trucks are hauling the oil. More trucks are to be put on the route in the near future and the shipments increased. Last week the hearing on the matter of a permit to lay a pipe line to carry the LaBarge crude was held at Cheyenne before the Public Utilities Commission. P. W. Spaulding, an attorney of Evanston, Wyo., and a representative of the Beneficial Oil Co., were the contesting applicants. Mr. Spaulding withdrew his application at the hearing and the permit was then granted to the Beneficial Oil Co. This company proposes to lay a pipe line from the field to the railroad next spring. The distance will be about 25 miles, although the road is about 40 miles. The survey for the line has been completed and the survey reaches the railroad about 3 miles east of Opal.

Expect Large Gas Well

In the Fort Collins Field in Colorado, on Section 7-9-68, the well on the Dumont lease being drilled by Joe Cook and the Union Oil Co. of California is on top of the Muddy sand. Joe Cook is a pioneer in the Rocky Mountain oil fields, having come to Wyoming from the Eastern fields when this country was being opened up. He advocates the drilling in of the deep wells without the use of a retaining fluid to hold back the pressure as against the custom of the California drillers who like to have their wells full of heavy mud or fluid when a big well is expected. This well is a little over a mile from the big Mitchell gasser and a large gas well is expected.

The wildcat test being drilled by the Continental Oil Co. on the Wallace Creek structure in Natrona County, Wyoming, about 15 miles south of Waltman, Section 15-34-87, has a hole full of water and bottomed at 3,102 feet. This well started in the Tertiary formation and expects to find production in the Cretaceous. It is thought the hole is in the top of the Cretaceous now, but water has been encountered all the way down and has made the work go very slow on that account.

The Texas Production Co. is drilling at 3,100 feet on Section 20-37-86, near Arminto, in Natrona County. This is the Wyland well which the Texas Production Co. took over after the Wyland interests had failed to find anything in the Frontier sands.

At Powder River, on Section 25-36-85, the Midwest Refining Co. is drilling at 3,210 feet on the wildcat located on the Jupiter Oil Co.'s land. This test was shut down for several months due to litigation over the title of the land, but this trouble has been settled and the test is drilling again.

At Dutton Creek, Carbon County, southern Wyoming, the Midwest is drilling at 3,840 feet on the wildcat test on this structure, on Section 1-18-78. This well is making a test on a hidden structure, covered over with a Tertiary deposit and the gelogy was worked out by drilling a number of shallow holes before the main test was started.

On Section 15-32-82, in Natrona County, the Dannaher Syndicate has a drilling well shut down on the Speas ranch on what appears to be a geological structure but is thought to be a mountain fault uplift by some geologists. This structure has the appearance of a perfect dome but it is at the west end of the Casper Mountains and may have been caused by the same uplift that caused this range of mountains. This well is located a few rods from the large artesian flow that comes from the Tensleep sand and the well is shut down with the hole at 200 feet and water.

The Ohio's wildcat on the Mellen Dome, Natrona County, Wyoming, drilling with a converted automobile truck engine is at 2,760 feet and making good headway with the gasoline power plant. No commercial production has been found as yet.

Pilot Butte Deep Test

The Argo Oil Co.'s deep test at Pilot Butte ran a 4-inch string of casing to near the top of the sand and then tubed the well and started to pump. The well only made about 10 bbls. daily and then the water broke through and the crew is now trying to mud off the water at the bottom of the casing. Not much hope is held out that this well will be able to make a commercial producer, but another hole is to be drilled with regulation size pipe to make a test of the deeper sands.

Natural gas has been turned into the Fort Collins line from the wells of the Union Oil Co. of California. This gas first passes through a gasoline extraction plant and is then used for domestic purposes in the city of Fort Collins. Another line is to be laid north from the field to carry gas to the city of Cheyenne, Wyo., for use there. The naural gas is mixed with manufactured gas.

The Hope Engineering Co. has completed the laying of a 6-inch gas line from Little Grass Creek to a connection with the Thermopolis gas line at the Golden Eagle Dome, in Hot Springs County. The wells on the Golden Eagle were unable to deliver enough gas to supply Thermopolis and the Thermopolis Gas Co. secured the lease on the Little Grass Creek Dome with two wells drilled that have been shut in and which will be turned into the new line. This line is 17 miles long and the Hope Engineering Co. is testing out preparatory to turning the completed work over to the company.

The field office at Midwest, Wyo., in the Salt Creek Field, of the Bureau of Mines was badly damaged by an explosion of gas and fire the past week. Many of the records of the field were destroyed or damaged by fire and smoke and only through hard work on the part of the Midwest fire department was the rest of the building saved.

The Lance Creek Field made a jump in production due to the big well that

(Continued on Page 123)

Kentucky-Tennessee

By Vern T. Whitney

BOWLING GREEN, Ky., Dec. 14.—A report that the Groce and Eaton test on the Burns farm, a quarter of a mile north of the Henry Oil Co.'s Foreman wells, on Big Buffalo Creek in the Big Neck of Owsley County, is showing for an excellent producer at an approximate depth of 1,150 feet in the Maxom sand, and that a venture near Broadhead, Rockcastle County, encountered a good oil show in the Irvine sand at 300 feet, features the past week in the eastern division of Kentucky.

The Wood Oil Co. has let a contract for another test in Rockcastle County. Although it has drilled three dry holes there this year, structural conditions are so favorable it will try again.

In the western division, two extensions to proven areas were made, one in Warren and the other in Barren County. Four wildcat tests, two in Barren, one in Meade and one in Cumberland County were abandoned as dry. In Barren County, the Smith & Son's venture on the Boles tract, between Coral Hill and the Hall Baker pools, was dry and plugged at 510 feet, and T. L. Gorby's W. Bales, south of the Gorby Pool, was plugged at 490 feet. W. S. Proper's trial on the Eva Carrington, near Gaston, Meade County, was given up on account of lack of funds. In Cumberland County, Grant and associates' No. 1 Hicks at Brush Creek, was drilled through the Sunnybrook sands with no oil showing and was abandoned.

Week's Work

A summary of the week's work in the different sections of Kentucky shows 27 completions, 9 failures, 2 gassers and 16 producing wells with a combined flush of 169 bbls. Compared with the previous week this shows 4 less completions, 3 fewer producers, a drop of 229 bbls. in initial yield, 1 more dry hole and 2 less gas wells. The wells were distributed by counties as follows:

County—	Comp.	Wells	Prod.	Dry	Gas
Barren	6	2	7	4	0
Lawrence-					
Johnson	5	5	51	0	0
Johnson-					
Magoffin	3	3	50	0	0
Warren	3	3	40	0	0
Owensboro Dist.	2	2	11	0	0
Cumberland	2	0	0	2	0
Wayne	2	1	10	1	0
Martin	2	0	0	0	2
Meade	1	0	0	1	0
Jackson	1	0	0	1	0
Total	27	16	169	9	2
Last week	31	19	398	8	4
Difference	4	3	229	1	2

Western Division

Barren County had a poor week, only two light pumpers being reported out of a total of six completions. The Wood Oil Co. finished an important test on the Jewell tract, good for 4 bbls. at 350 feet, extending the Emery-Moore Pool a half mile to the west. Shale was from 219 to 269 feet and the sand from 339 to 344 feet. This was the second trial on this farm, the first one being dry.

In the Emery-Moore Pool, Ziegler Brothers' No. 22 on the Taylor Mansfield was dry at 449 feet. The shale was topped at 215 feet and was 50 feet thick. The sand was encountered from 441 to 448 feet. This will conclude drilling operations on this tract for the time being. The Houchins Leasehold Co. got a dry one in No. 19 Pitcock at 440 feet, and the rig was moved to the next location.

The Wood Oil Co.'s No. 8 Houck Brothers in the Hall Baker area, north

(Continued on Page 98)

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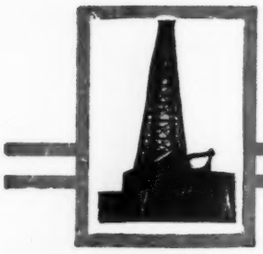

Southwest Texas Fields

By Special Correspondent

Increased activity in Medina County territory, particularly in the Ina Pool. Additional gas wells completed in the Mirando Field. Extension of the Aviators Pool. Eleven rigs running on southeastern edge of Lockhart Field. Good shallow production in Bexar County.

SAN ANTONIO, Texas, Dec. 14.—Featuring the drilling activity in southwest Texas the past week is the increased activity in the Medina County territory where the Ina Pool is struggling into existence and the completion of additional gas wells in the Mirando territory and extending of the Aviators Pool.

Golden West Oil Co. of California, which recently bought 60 acres in the Ina Field immediately north of Eastham & Tarver's No. 1 Viola Wilson, which has been pumping 50 bbls. a day from a depth of 966 feet, has purchased 85 acres additional, 80 acres of which is a quarter of a mile north of the first block. Two derricks went up last week on the first block, one offsetting Eastham & Tarver's No. 1 Viola Wilson and the other 300 feet east and offsetting the Gibson Oil Corp.'s No. 1 Viola Wilson. Rigs are moving in for these two tests and they will be drilling in a few days and a derrick is going up on the 80-acre block to the north and a rig will move in at once on it. Witherspoon Oil Co. is about rigged up in Survey 133 and about ready to spud in. His location is over 2 miles southwest of the Golden West's location in its 80-acre block and the seven producing wells in the field are between the two locations. There is a surface gravel and rock to get through in the field that makes the first drilling a little slow, but inside of about two or three weeks the present drilling tests or tests rigging up will tell considerable about the new pool. There are seven wells drilling or ready to start.

Arnett Oil Co.'s No. 2 Nixon failed to make a well at 1,018 feet and it is plugging back to 933 feet, where it had 19 feet of sand and will seek to complete a well there. It is a half mile southwest from the Eastham & Tarver well and a mile southwest of the discovery well of the field. Anderson & Holden of El Dorado, Kan., are rigging up on the Adams tract a mile to the south of the discovery well. Witherspoon is practically rigged up on Survey 133. Gibson Oil Corp. is drilling its offset 300 feet south of Eastham & Tarver's No. 1 Viola Wilson. Golden West is rigging up on two tests immediately north of Eastham & Tarver and on a third test a half mile north of the discovery well of the field. Magnolia has a block of 90 acres close in and immediately northwest of the present producers of the field the nearest point being not over 1,000 feet from production. The Texas Co. also has a block close in and Rydal Oil Corp. owns considerable acreage. None of the major companies has made any move yet to start drilling. Ina Oil Co. is moving its rig from its No. 3 Schmidt to a new location. Four miles southwest of the field Metzger is nearly through the surface rock with a cable tool rig and will change to rotary in the northwest corner of Survey 528. Five miles northwest Medina Oil Co. has moved the rig from No. 1 Haeglin, a dry hole drilled last summer, to the southeast corner of the Taylor farm, a mile farther west and has spudded in. It is on Survey 135.

Mirando Gas Development

Cole Petroleum Co. has completed a 52,000,000-foot gas well on its block of leases a few miles northeast of Bruni in Webb County. It is the first of six wells contracted to be drilled for the Houston Pipe Line Co., a subsidiary of the Houston Oil Co. Completion of the well is assurance that the Houston Pipe Line Co. will build its projected pipe line from the field to Live Oak County, a distance of 85 miles, to a connection with its line from the Cartwright gas field in that county to Houston. Two other wells are being drilled by Cole Petroleum Co. and derricks are up for the others. The gas on 8,000 acres of leases in Webb and Duval were sold to the Houston Pipe Line Co. for 5 cents per 1,000 feet. Gas on additional leases out of the Cole block was sold to the Southern Natural Gas Co. of this city and its pipe line from that field is now about half completed and will be in operation by January 1.

In the Carolina-Texas gas field O. W. Killam completed a 40,000,000-foot gas well on the Usher Carson lease out of Survey 336. The gas was previously contracted to the Southern Natural Gas Co. In the Carolina-Texas district Snowden-McSweeney are drilling at 2,602 feet on Survey 682. Morgan-Gibble, on Block 4 of Survey 336, are drilling at 1,755 feet in sticky shale. M. O. P. No. 2 de la Garza on Survey 678 is drilling out the cement plugs to test. This well is a mile to the northeast and hit the formations a little lower than the others, being at about 2,040 feet. Seagraves & Moody-Morgan's No. 1 on Survey 336, is in gumbo at 1,900 feet and nearing the gas sand.

Maverick County

Rycade Oil Corp. is drilling at 2,785 feet in No. 1 Chittim in Maverick County, 17 miles east of Eagle Pass. It is still having trouble with caving formation and has made only 85 feet in two weeks. The same company's No. 1 Cox is drilling at 565 feet with a light rig; No. 1 Chittim being with steel derrick and heavy type rig. No. 1 D. Sullivan, by the same company, has completed erecting a steel derrick and large type rotary rig and with gasoline driven engine and has spudded in.

Bastrop County

Plateau Oil Co. is drilling at 1,000 feet in No. 1 Birmingham in the southwestern part of Bastrop County, a test for Serpentine, but which will go to the Edwards if the Serpentine is absent. Knox, on the Trigg farm a short distance from Plateau, is rigged up, but has not spudded in. In the northern part of the county, near Elgin, Knox is drilling at about 1,700 feet in No. 1 Lane. Andrews Petroleum Co. is clearing titles on the block east of Elgin in northern Bastrop and expecting to start drilling about January 1.

Bee County

Seagraves & Moody are resuming work on No. 1 Welder, east of Beeville, and will carry it down from 2,651 feet to about 3,500 feet.

Bexar County

Utah-Texas Oil Co.'s No. 1 Ivan Vick, in southern Bexar County, spudded in December 6 and has set 12-inch surface casing and is drilling with rock bit at 220 feet. Location for the well was made from subsurface information disclosed by the logs of dry holes at a distance of 1 to 3 miles from this location. Down to the rock at 220 feet formation was gumbo, which is absent in the surface formations of nearby wells. Helvetia Oil Co., in Somerset, is completing No. 2 J. M. Smith, No. 14 Weaver and No. 5 Sarah Smith homestead, all good average wells of the field, about 10 bbls. In the Southton Field, in southern Bexar County, A. G. Kiefer is rigged up on No. 1 Southton Park. William F. Morgan is rigging up for his first test on the L. H. Hamilton tract. George E. Ginter is completing No. 5 Cotton Mill. Andrews & Kerr are drilling on their fourth. All the wells are in a territory where good shallow production of about 10 to 15 bbls. is had at a depth of 640 feet.

Caldwell County

Among the wildcats in Caldwell County the Wilford No. 1 Schroeder, located a little west of the town of Lockhart, is a sulphur water well at practically 2,000 feet and in the top of the Edwards. Between the Lockhart Field and the Luling Field Gulf Production Co., at 2,041 feet in No. 1 Magee, had failed to reach the Austin chalk and was drilling in the Taylor marl. The chalk is had at about 1,600 feet in the Luling Field and the Gulf well, therefore, seems low. It will be carried to the Edwards lime, however.

In the Lockhart Field all of the eleven rigs running are in the southeastern edge of the field. J. K. Hughes got a dry hole on the Berry Davis, about 1,000 feet east of John W. Hooser's producer in the northwest corner of the Roger Allen tract. Hooser has completed three wells on the 65 acres out of the north end of the Crenshaw and his No. 1 Allen offsets his No. 3 Crenshaw. He is drilling on No. 4 Crenshaw. Johnson Brothers of San Antonio, in their No. 1 Allen, an offset on the north of the Hooser No. 1 Allen, have got a good well estimated at around 50 bbls. It offsets on the south the dry hole on the Cardwell, drilled by Lonnie Glasscock. George M. Ball, who has failed thus far to make a producer of his No. 1 Hemphill, is letting the well stand and is down several hundred feet on No. 2 on an 8-acre tract next north of his first test and nearer to production. Witherspoon has two rigs running in the field and the last completion is No. 6 Brewer. Gulf has three rigs running and all are drilling on the Riddle tract between the field and the Crenshaw wells of Hooser, which have extended the field. C. N. White is drilling on the Cardwell tract. C. H. Houston has started No. 2 Allen changing the location to his south line and within 150 feet of the Crenshaw lease, instead of on the north line and offsetting the Riddle. Johnson Brothers of San Antonio have two rigs running, one on the Cardwell and one on the Allen.

C. D. Wilford, who has two wildcat tests started, one on the Holmes southwest of the town of Lockhart, and the other on the Linam farm, northeast of the town of Lockhart, and which were shut down on account of the dry weather last summer, is understood about to resume operations on them.

Travis County

Dixie Oil Co.'s No. 1 Johnson, in Travis County, near Creedmoor and not far west of Plateau's No. 1 Birmingham in Bastrop County, is drilling at about 600 feet.

Duval County

Humble Oil & Refining Co. is rigging up on the Hagrist farm after having abandoned No. 1 Woods. The new location is back up in the direction of the McMullen County line, the first two tests by Humble on its block down there being in McMullen at Loma Alta.

(Continued on Page 116)

Pennsylvania-West Virginia

By D. S. Wakenight

PITTSBURGH, Pa., Dec. 14.—Operators in the Eastern fields had very little to claim their attention during the past week. With one exception all of the wells came in light producers, gassers and dry holes. The exception noted is the South Penn Oil Co.'s large gasser in Greene County. Contrary to the usual rule, the deep sand territory in southeastern Ohio completed no large producers and West Virginia but a few larger than the general average. All three divisions had fewer completions than the previous week.

Field Developments

In Central district, Doddridge County, West Virginia, Nay & Kintzer have completed and shot in the Big Injun sand a test on the H. B. Williams heirs' farm. It is located 700 feet south of the Carter Oil Co.'s test on the William Hufford farm and produced 55 bbls. the first 24 hours after shot. In the same district, the Carter Oil Co. has a 4-bbl. pumper in the same formation at a second test on the J. L. Leeson farm.

Wildcat Showing Oil

On Jakes Fork of Little Sandy Creek, Elk district, Kanawha County, the United Fuel Gas Co. drilled its test on the W. H. Canterbury farm to a total depth of 2,985 feet and after leaving the Big Injun sand found neither oil or gas. The hole was then plugged below the Big Injun sand and shot in that formation. The location is far in advance of production and it will make a small pumper. In West Union district, Doddridge County, the Carter Oil Co. has completed in the Big Injun sand No. 3 on the R. McKinney farm good for 10 bbls. a day.

The United Fuel Gas Co.'s test on the J. F. Drennen farm, in Geary district, Roane County, is a gasser in the Big Injun sand. In the same district, the Newton Oil & Gas Co. has a gasser in the same formation at a test on the A. O. Smith farm. In Grant district, Harrison County, the Grasselli Chemical Co. has now drilled No. 4 on the L. C. Bond farm through the Benson sand. It is a light gasser in the fifth sand. In Elk district, the same company drilled a test on the S. A. Shuttleworth farm through the same formation, a depth of 4,326 feet, and has a gasser.

In Clay district, Monongalia County, the Clay District Oil Co.'s Bayard sand gasser has turned to oil. It is rebuilding the rig and will put it to pumping and think it will be good for 4 or 5 bbls. a day. In the same district, the Moore Tex Oil Co. has spudded in a test on the J. M. Moore farm. In Lincoln district, Marion County, the Carnegie Natural Gas Co. is skidding the rig at its test on the E. L. Morgan farm and starting a new hole.

In Jefferson district, Pleasants County, the Jeannette Oil & Gas Co. completed No. 4 on the Gorrell heirs' farm good for 6 bbls. a day in the Berea grit. In the same district, the Aetna Oil & Gas Co. has drilled No. 13 on the Ross Estate through the Squaw sand and dry. In the same locality, A. F. Marple & Co. have the rig completed for a test on the J. W. Pratt farm. In McKim district, 1 mile north of production at the head of Goose Creek, David French and others have drilled a test on the John

(Continued on Page 65)

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Fields of the Central West

By Whit

West End Oil Co. gets 40-bbl. well in Findlay Field and Sun Co. 30. Sargent and Hartman have 200 bbls. in Stillwell Pool, Illinois, and Riley and others 165. Ohio Co. gets 70 bbls. in Bridgeport Field; R. A. Young, 100 bbls., Clark County; W. C. McBride, 90 bbls.; Ohio Co., 75 bbls., Wooster Field, Ohio.

FINDLAY, Ohio., Dec. 14.—The week's development work was fairly active in the division of the Central West Field north of the Ohio River, there being 39 wells reported, 23 of which were oil producers, with a flush of 1,010 bbls., 4 dry holes and 12 gas wells, which includes 6 offside tests. Part of the week proved fair weather, the other part being rather bad for work being of the snowy, blustry kind which hampers drilling to a great extent.

The completed wells for the week were distributed among the various fields as follows:

Field—	Comp.	Oil Wells	Prod.	Dry	Gas	Abd.
Lima	12	12	208	0	0	0
Indiana	2	1	2	1	0	0
Illinois	10	7	675	3	0	6
Central Ohio	9	3	125	0	6	0
Offside	6	0	0	0	6	0
Total	39	23	1,010	4	12	6

Lima Field

In the Lima Field of northwestern Ohio some very good finds were made during the past several days regardless of weather conditions and so long as wells of the near caliber are found in the Trenton it will mean the drill will keep at work.

In the Findlay Field, several miles to the southwest of the city of Findlay, in Liberty Township, Hancock County, the West End Oil Co.'s second test in the southwest corner of the J. K. Wheeler, known on the map as the A. Foltz farm, in the southwest quarter of Section 31, pumped 45 bbls. Top of Trenton found at 1,286 feet and drilled 80 feet in. In the same township, B. B. Porter's second test in the northeast corner of the B. B. Porter farm, mapped as the D. Bish farm, in the northeast quarter of Section 29, pumped 15 bbls. Top of sand at 1,283 feet and drilled 80 feet in. In Orange Township, same county, the Ohio Oil Co.'s No. 14 well, 250 feet from the south line and 660 feet from the west line of the W. W. Eaton farm, in the west half of the northeast quarter of Section 8, pumped 4 bbls., with top of sand at 1,307 feet and oil at 138 feet in.

There is no doubt in the minds of operators that deeper in the sand must be the spot which the drill must look for the future oil in the old Trenton Rock Field, and while such wells will not produce the big flush production of the early wells drilled less than 100 feet in the sand, they are well worth the expenditure. In Henry Township, Wood County, the Ohio Oil Co.'s No. 20 well, 200 feet from the north line and 600 feet from the west line of the David F. Biehler farm, in the northwest quarter of Section 14, found the top of the Trenton at 1,178 feet and drilled to a total depth of 1,515 feet or 337 feet in the sand, getting a 10-bbl. pumper. In Liberty Township, same county, the Sun Co. drilled No. 15 in the southeast corner of the Clarence Potter, mapped as the Miller farm, in the northwest quarter of Section 23, to a total depth of 1,403 feet, top of sand being found at 1,197 feet and oil at 306 feet in, the well showing 30 bbls. In Portage Township, same county, F. Lee Rouse and others' No. 11, in the southwest corner of the Maria Coffinberry, mapped as the H. D. Coffinberry farm, in the southwest quarter of Section 18, struck top of Trenton at 1,210 feet and went 280 feet in the sand to a total depth of 1,490 feet, the well pumping 7 bbls. These three wells are located in territory that was drilled in the latter '80's and early '90's, although the sand in those days were penetrated to from 20 to 60 feet and seldom the drill went as deep as 100 feet in the sand. In Middleton Township, same county, the Waterville Gas & Oil Co.'s No. 7 well, 75 feet from the north line and 975 feet from the west line of the John Davis farm, in River Tract 51, pumped 2 bbls. Top sand at 1,175 feet and drilled 100 feet in.

The Delphos Drilling Co. and others made a nice strike at a test 900 feet from the south line and 260 feet from the east line of the William Lenney farm, in the northwest quarter of Section 12. The wildcat struck top of Trenton at 1,306 feet and drilled 52 feet in, showing a first 24-hour production of 40 bbls.

Near the town of Mendon, in Center Township, Mercer County, acreage producers are being developed with regularity, and one can about figure on the size of well to be had before drilling. Mack P. Colt's No. 12 well, 300 feet from the north line and 900 feet from the west line of the W. M. Miller farm, Section 4, pumped 12 bbls., sand being topped at 1,129 feet and oil at 50 feet in. No. 13, located in the southwest corner of the same farm, pumped 20 bbls., with sand topped at 1,128 feet and 51 feet in. In the same section, H. H. Cuppler and others struck top of Trenton at 1,128 feet and drilled 51 feet in for a 15-bbl. well in a test on the northwest corner of the Charles D. Wuester farm, in the southeast quarter of the section.

In McDonel Township, Hardin County, the Boston-Southwestern Oil & Gas Co.'s No. 1 well, 750 feet from the south line and 250 feet from the west line of the Polly McConnell farm, pumped 8 bbls. after given a shot and allowed to stand for a short time. Top of sand at 1,450 feet and drilled 40 feet in.

Indiana Field

Only two completions were reported for the week from the Indiana fields and they were both in the southwestern section of the State, in the Princeton district.

In Barton Township, Gibson County, the Gem Oil Corp.'s second test in the northwest corner of the Lucy T. English farm, Section 8, proved a duster at a depth of 1,322 feet. The Murphy Oil Co., of Pennsylvania, is drilling a test in the same township, on the Edward Dorson farm, Section 20, while in Center Township, Gray and others are drilling No. 5 John Wirts farm, Section 30.

In Turman Township, Sullivan County, J. F. Bolinger and others' No. 4 on the northeast corner of the W. W. Harris farm, Section 2, pumped 2 bbls. at 702 feet.

In Clay Township, Pike County, the Murphy Oil Co. of Pennsylvania, is drilling a test on the R. M. and P. C. Stewart farm, Section 14, and A. B. Bement is drilling No. 4 Claude Loveless farm, Section or Lot 121.

Illinois Field

While an occasional dry hole is discovered in testing out the new Stillwell Pool in the Allendale Field of Wabash County, Illinois, the good wells are offsetting the dusters in number to make the field by far the best now being developed in the Central West Field. More real production is being produced from this pool than in any other township, in any of the Eastern fields at this time. The main Bridgeport Field covers portions of Clark, Coles, Crawford, Lawrence and Wabash Counties and runs almost north and south through the counties named and there are now prospects of a still further extension to the south of this great field into both Edwards and White counties also in the Wabash Valley.

In days gone by the oil operator expended his money in developing the State as an old field with little help on the the highway question. Now things have changed and Illinois is to have some of the best surfaced highways in the country. The highway map of the State in 1921 made a very poor showing of macadamized highways, while the year 1925 shows new highways in all parts of the State. The State Bond Issue Road Systey in Illinois to be built under provisions of the $100,000,000 bond issue law, means much for the future of the State and will give the oil man something to drive on at least.

Seven new completions are reported from the Allendale Field in Wabash Township, Wabash County. Sargent, Hartman and others' second test, 200 feet from the north line and 600 feet from the east line of the James Stillwell farm, in the northeast quarter of Section 12, is credited with a production of 200 bbls. Top of the sand was found at 1,419 feet and drilled 25 feet in the Biehl sand. In the northeast corner of the Tracey heirs' farm, in the southeast quarter of Section 12, a well is reported at 165 bbls., owned by Risley and others, the discoverers of the Stillwell Pool. Top of sand was struck at 1,407 feet and drilled 13 feet in. This well is southwest of the new well of Sargent and Hartman.

In Wabash Township, Snowden Brothers' test in the northeast corner of the Sallie Compton farm, in the northeast quarter of Section 11, about one-half mile north of Allendale, and west some distance and a little north of the discovery well, failed to find a commercial well at a depth of 1,414 feet and gave it up as a duster. South of the discovery well more than a mile, the Silurian Oil Co.'s test in the southwest corner of the Cisil heirs' farm, in the northeast quarter of Section 24, is reported good for 40 bbls. Top of sand at 1,409 feet and drill 29 feet in. This well appears to widen the pool southward. In Section 18, the Adams Corner Oil Co.'s No. 3 well on the Mack Madden farm, almost directly east of Allendale, is another dry hole. In Section 6, Art Smith and others' second test in the northwest corner of the Johnson heirs' farm, in the northeast quarter of the northwest quarter of the section, is a duster at 1,470 feet. J. H. Brian's test, 600 feet from the north line and 200 feet from the west line of the J. H. Stillwell farm, in the southeast quarter of Section 7, proved a duster at 1,475 feet. These failures will not deter work in the field, as they mean but little, as the field is known for its spottiness.

In Centralia Townshp, Marion County, the James Oil Co., formerly reported as Timberlake and others, completed a test in the southwest corner of the Fannie McIntosh farm, in the northeast quarter of the southeast quarter of Section 4, that produced 10 bbls. from a depth of 1,634 feet. This is 40 miles or more almost directly west of the Wabash County Field.

In the Bridgeport Field, in Dennison Township, Lawrence County, the Ohio Oil Co.'s No. 35, in the northeast corner of the Joseph Gray farm, in the southeast quarter of Section 35, showed a flush of 70 bbls. In this township, the same company abandoned No. 24 on the Joseph Gray farm, Section 34. Joseph F. Griggs and others abandoned Nos. 1 and 2 E. R. Robins farm, Section 34, and the Big Four Oil & Gas Co. abandoned No. 17 on the Sherman Gillespie farm, Section 26. In Bridgeport Township, the Snowden-McSweeney Co. abandoned Nos. 3 and 10 E. A. Fyffe farm, in Sections 1 and 36.

On Parker Prairie, in Parker Township, Clark County, R. A. Young made one of the best shallow sand strikes made in the Casey-Wakefield Field in many a day, in No. 23 well, 240 feet from the north line and 600 feet from the west line of the David Lee farm, in the north half of the northwest quarter of Section 4. The well's production the first 24 hours amounted to 100 bbls. at a depth of 535 feet. In Martinsville Township, same county, the W. C. McBride, Inc.'s No. 10 well, 666 feet from the south line and 200 feet from the east line of the Nettie Baker farm, Section 30, produced 90 bbls. from the Niagara lime formation at 1,604 feet. This formation lies directly below the Stray sand that made the Martinsville Pool famous for the past several years. The finding of oil in the Niagara lime gives this pool at least two shallow sands, the Stray sand, Niagara lime and the Trenton Rock, as the pool furnishes production from them all.

New Development to Start

Edward Craig, well known oil man of Albion, Ill., who has been watching the development of Wabash County before and since the first well in the Allendale Field was drilled by Perry Andrews (now of Vincennes, Ind.,) and his associates in July, 1912, has been busy for the past few weeks leasing up a block in advance southwest of the Wabash County production.

This acreage lies southwest of Grayville, Ill., in White County, between the Big Wabash and Little Wabash rivers, about 2 miles west of the Big Four Railroad and Route 1 in Illinois. (Both railroad and Route 1 run through the center of the Allendale Field.) About 20 years ago, as the writer remembers, a well was drilled on the southwest quarter of the northeast quarter of Section 22, Township 3 South, Range 10 East, Gray Township, due west of Grayville, on the W. H. Kershaw farm, and had a good showing of oil, but not large enough in those days to attract attention away from the productive fields. In 1913 a second well was drilled on the Walter L. Curtis farm, in the northeast quarter of the northwest quarter of the same section and the well had a fairly good gas showing, as there was sufficient gas to supply the landowners for all purposes, but never connected up. The well is still showing gas after being in for a dozen years. These two wells are the only ones drilled in Gray and Phillips Townships, White County, between the Big Four Railroad and Little Wabash River. The territory west of Grayville has been reported upon as favorable for prospecting by two geologists and it was these recommendations and other information obtained by Mr. Craig that caused him to lease this block southwest of Grayville. White County joins Wabash County to the southwest.

Central Ohio Field

It looks as though the old Wooster Field, in Wayne County, in the Central Ohio Field, was going to come back into its own, after a quietude of several years. The Ohio Oil Co. has maintained a steady drilling campaign in the field and seldom finds anything like a duster, as the wells either prove gas producers or small oil wells, but the newest well by this com-

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Oil May Exist in Southeast Oklahoma

Geologist Puts Forth New Ideas Concerning the Carbon Ratio Theory in Talk Before Tulsa Geological Society

By C. D. Lockwood

Considerable territory in southeastern Oklahoma, hitherto regarded as good for the production of gas only, may be placed in the classification of prospective oil acreage if an idea presented before the Tulsa Geological Society by Russell S. Tarr recently is proved true. This idea challenges one that has long been regarded by most of the geological profession as an established fact, the carbon ratio theory promulgated in 1915 by David White, head of the United States Geological Survey. This theory has worked to such perfection in Oklahoma and Pennsylvania that it has apparently solved the puzzling question of why oil production is abruptly cut off along the southern border of Okmulgee County and northern McIntosh County and nothing but gas is encountered southeast of a very definite line extending in a general northeast-southwest direction, with a few exceptions.

The carbon ratios worked out by Mr. White and his associates and the contour lines drawn from them were not questioned by Mr. Tarr in his talk before the Tulsa society, but the interpretation of those contours, and their significance were specifically challenged. And while Mr. Tarr's ideas may seem at first glance to differ little in general application, they will, if true, have an important bearing on the search for oil in Oklahoma.

Carbon Ratio Theory

Briefly, the carbon ratio theory means that in areas where the rocks in past geologic times were subjected to a certain amount of pressure and temperature, determined by the relation of fixed carbon to the volatile hydrocarbons in coal beds found in the region, any oil that may have originally existed in that region would have been converted into gas.

Myron L. Fuller, in the November, 1919, issue of Economic Geology, set forth the relationship of carbon ratios in coals to oil and gas, and following is an abbreviated form of his conclusions:

Carbon Ratios (Surface)	Production
Over 70	No oil or gas with rare exceptions.
65-70	Usually only "shows" or small pockets. No commercial production.
60-65	Commercial pools rare but oil of exceptionally high grade when found. Gas wells common but usually isolated rather than in pools.
55-60	Principal fields of light oils and gas of the Appalachian fields.
50-55	Principal fields of medium oils of Ohio-Indiana and Mid-Continental fields.
Under 50	Fields of heavy coastal plain oils and of unconsolidated Tertiary or other formations.

The accompanying map shows the carbon ratio contours for the east central part of Oklahoma, and a glance at an oil map of the State will reveal a close relationship between one of these contours and the dividing line separating the oil producing zone from the region where nothing but gas has rewarded the efforts of wildcatters so far. This close relationship, coupled with a similar relationship in the Appalachian fields, led to the theory promulgated by Mr. White, a theory which has been accepted by the majority of geologists but which fails to answer many puzzling questions.

Depositional Theory

Mr. Tarr's idea is that the conditions noted in the Pittsburg-McIntosh and adjoining areas are due primarily to conditions under which the sands, and especially the source beds of the oil and gas, were deposited, rather than the amount of heat and pressure, or metamorphism, to which they have been subjected. And while the line denoting the different conditions under which the beds were deposited in this area roughly parallels the carbon ratio contour line, the practical feature for the oil operator is that under the depositional theory there is a chance of finding oil in the region to the southeast by drilling through the gas producing beds down to beds or sands which were deposited under the same conditions as those in Okmulgee County and areas to the north.

In other words, the carbon ratio theory and the depositional theory mean practically the same thing so far as the upper producing beds are concerned but the difference lies in the possibility of deep oil. Due to the fact that the formations are known to thicken enormously toward the southeast, the depth to which it would be necessary to drill in large parts of Pittsburg, McIntosh and adjoining counties is probably prohibitive with present drilling methods. However, there are several major anticlines or uplifts in this region where the lower rocks have been pushed up and the upper formations eroded sufficiently to place the oil sands within reach, although even on these favorable high areas the depth will probably be considerable. However, as drillable structures gradually become scarcer and scarcer in Oklahoma and the depth to which the drill must go in the regular producing zone becomes greater and greater, it is evident that somebody with courage and financial resources will test out this theory. It may be a long shot, but many, too many, of the wildcat tests started nowadays are just about as long shots as this.

Inconsistencies Cited

Mr. Tarr showed that while there are many facts to support the carbon theory there are also numerous inconsistencies in its application, not the least of which is its failure to work in Illinois. The presence of distinctly separated oil and gas fields in the same sand located in the heart of the oil belt is another mystery that has not yet been explained, but which Mr. Tarr thinks can possibly be accounted for by differences in the conditions under which the sand and its source beds were deposited.

Mr. Tarr considers that a possible explanation for the difference between the oil and gas formations may lie in the different types of bacteria which cause decay under fresh or salt water. This theory was set out in the January, 1925, bulletin of the American Association of Petroleum Geologists, on page 61. It may be that this theory, with some additions or variations, will be the explanation sought.

Whenever a theory of such well-established reputation as the carbon ratio theory, and one which is supported by such able men as David White and other leaders, as well as the majority of petroleum geologists in the country, is challenged, the customary procedure is to challenge the authority of the man who advances the new thought. It should be remembered, however, that back in 1885, when the anticlinal theory of the accumulation of oil and gas was being advanced by some geologists, the head of the Pennsylvania Geological Survey wrote in a preface to one of his papers that "the anticlinal theory is now a justly forgotten superstition." Whether the carbon ratio theory is later substantiated or rejected the ideas advanced by Mr. Tarr deserve serious consideration, and an unlimited field for research yet remains.

Mr. Tarr's Explanation

Mr. Tarr explains his ideas as follows: "In considering the sedimentary history of Oklahoma from the Mississippian period to the Permian times, two important points stand out prominently. One is the fact that the advance of the early Mississippian sea over the Mid-Continent region was characterized by the deposition of predominantly marine sediments. The later succession of beds in the Pennsylvanian times graded in a general way from dominantly marine (whether carbonaceous or not) to dominantly continental. In this change there were, of course, all types, variations and combinations of marine and continental deposition.

"The second important point is that the continental beds were derived from a land mass to the southeast, probably somewhere in Louisiana, and these beds thicken enormously in a general southwesterly direction. Also, the lower limit of the predominantly continental zone becomes increasingly closer in age to the base of the early Mississippian sediments. This is due to the fact that the sea slowly retreated northward because of the gradual encroachment of the continental beds on the sea basin. As a result, in later Permian times, the sea was present only in western Oklahoma. Of course, the retreat of this sea was not regular and even, but was broken by re-advances over previously lost territory, thereby forming marine beds underlain and overlain by continental beds.

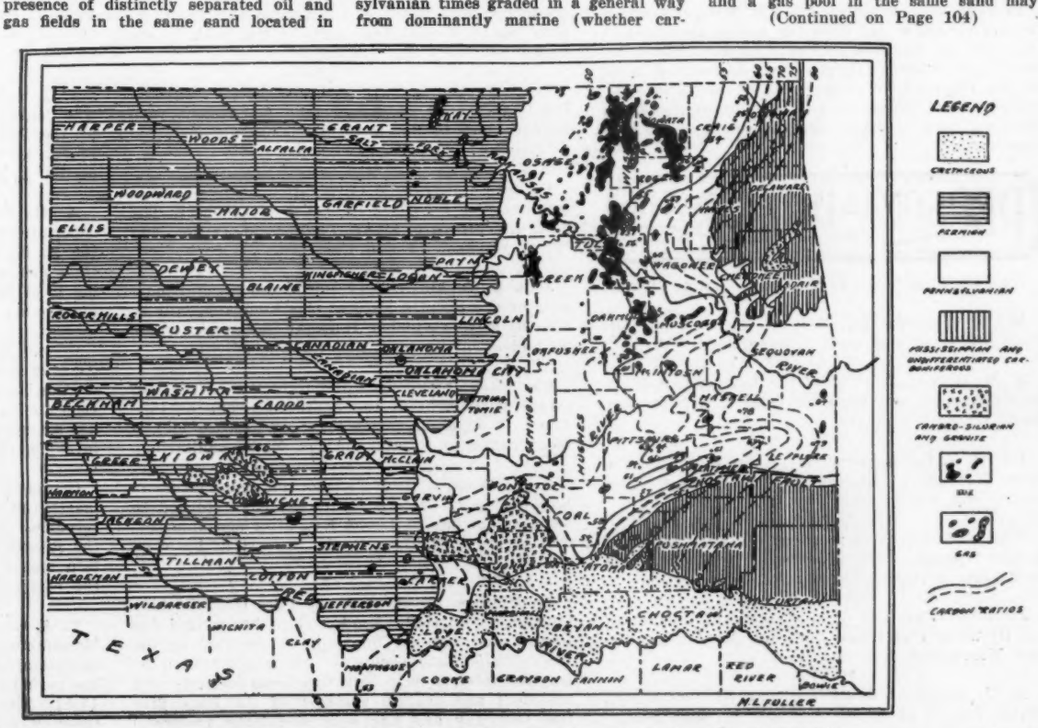
"As a result of these conditions, it can be seen that the depth to the base of the Mississippian will increase as we go southeastward. Furthermore, beds that are of marine origin in, say, Okmulgee County, may be of continental origin in Pittsburg County.

"The writer wishes to bring out this point strongly because of his belief that in this relationship between marine and non-marine beds lies the real reason for the division between territory that produces mainly oil and that which produces mainly gas.

Field for Investigation

"This problem of why one horizon will produce oil in one region and gas only in the next region is not confined to the boundary line between oil and gas territory as shown by the carbon ratio theory, but can be carried into the central part of any oil region. There is a great field for investigation into this question, especially since in many cases an oil pool and a gas pool in the same sand may

(Continued on Page 104)



Carbon ratio contour map of Oklahoma. Reprinted from Economic Geology, Vol. 15, Page 232.

MEN KNOWN IN OILDOM

William B. Sutton

William B. Sutton resigned recently as assistant superintendent of the land department of the Prairie Oil & Gas Company to become head of the Vacuum Oil Company's land department with headquarters at Houston, Tex.

Mr. Sutton was born at Utica, New York, on February 26, 1875, and his family moved to Russell County, Kansas, in 1887. He lived on a ranch until 1897 when the family moved to Kansas City, Kan.

He graduated from Kansas University in 1899, and from the Kansas City School of Law in 1902. He is a member of the Kansas chapter of the Phi Beta Kappa fraternity.

Mr. Sutton's oil experience dated back to 1903 when he entered the Chautauqua County, Kansas, oil activity, as field manager for the Chautauqua County Oil & Gas Company. At that time he lived at Peru, Kan. In 1907 he moved to Kansas City, Kan., where he remained until 1917, serving as vice president of the Chautauqua County Oil & Gas Company until the Prairie Oil & Gas Company bought out that concern.

In July, 1917, he entered the land department of the Prairie Oil & Gas Company and in December of that year he was sent to Texas at the start of the Ranger excitement. He remained in Texas as head of the Prairie land department at Eastland until October, 1923, when he was brought to the Tulsa office and made assistant superintendent of the land department.

PERSONAL PARAGRAPHS

John D. Rockefeller, Jr., has been visiting Mexico.

* * *

W. L. Valentine, president of the Fullerton Oil Company, spent last week in Bakersfield, Calif.

* * *

E. H. Moore, president of the Independent Oil & Gas Company, has returned from a trip to New York.

* * *

Harry W. Black, president of the Black Steel & Wire Company of Kansas City, Mo., was a Tulsa visitor last week.

* * *

Fred S. Cook, superintendent of the Prairie Oil & Gas Company land department, is back at his desk after a trip to Texas.

* * *

John Darr, general superintendent of the Southern Group of Pipe Lines, telegraph department, visited Winchester, Ky., last week.

* * *

M. J. Gavin, refinery engineer of the United States Bureau of Mines, has been in Nova Scotia, where he is examining oil shale deposits.

Harry P. Neuhardt of Vernon, Tex., spent several days in the eastern Kentucky fields last week. Mr. Neuhardt is connected with the Petroleum Exploration.

* * *

Tom Anderson, owner of the productive Anderson farm in the Kevin-Sunburst Field, Montana, is returning to his old home in Denmark to spend the winter.

* * *

J. L. Dittman of the Wall Rope Company with headquarters at Bartlesville, Okla., has returned from a 10-day inspection of the Artesia, New Mexico, Field.

* * *

E. J. Nicklos has been made division manager in charge of Oklahoma-Kansas producing properties of The Texas Company. He has been superintendent before.

* * *

Leo Ranney, petroleum engineer, and inventor of the Ranny process of mining oil, has left Tulsa for a trip to Eastern cities. He will stop at Kansas City en route.

* * *

Ted Hammett of the Sinclair Oil & Gas Company's land department, has been transferred to Enid, Okla., and is in charge of the Sinclair land office at that city.

* * *

Joe Snyder formerly of the Roxana Petroleum Corporation has become assistant to H. E. Smith, vice president of the Sinclair Oil & Gas Company, in the Tulsa office.

* * *

Edwin Higgins, secretary of the Chamber of Mines and Oil, attended the safety first meeting of the California Industrial Accident Commission held recently in Taft, Calif.

* * *

Nelson K. Moody and Dana H. Kelsey, president and vice president of the Prairie Oil & Gas Company, were in Tulsa last week to attend the funeral of the late D. F. Connolly.

* * *

L. C. Wallach, managing director of Sterns, Ltd., oil distributors of London, Eng., is expected to visit New York during January for the purpose of purchasing refined products.

* * *

Ralph E. Davis, engineer of Pittsburgh, Pa., announces the addition to his staff of Eugene A. Stephenson, geologist, formerly of the South Penn Oil Company of Pittsburgh.

* * *

H. J. Taylor of Denver, chief accountant of the producing department of the Continental Oil Company, spent several days early in the week in the Casper offices of the company.

* * *

Don W. Harrington, formerly of the Marland Oil Company of Oklahoma land department with headquarters in Ponca City, has been transferred to the Big Lake, Texas, district.

* * *

California Petroleum Corporation board of directors has been increased from 9 to 11 members. The new directors are H. G. Lapham of Boston and W. C. Hammon of San Francisco.

* * *

John B. Tonkin, vice president and general manager of the Peoples Natural Gas Company, will be able to leave Columbia Hospital this week, where he underwent an operation for appendicitis.

* * *

Charles K. Simmons, Pittsburgh, Pa., of the real estate department of the Southern Group of Pipe Lines, is on a six-month leave of absence and is recuperating at Clinton Springs, N. Y., sanitarium.

* * *

A. H. Wagner, field manager for the Petroleum Exploration in eastern Kentucky, has returned to his headquarters at Leeco, Ky., after spending several weeks in Montana in the interest of his company.

* * *

W. P. Gage, president of the Pure Oil Pipe Line Company, with Dallas headquarters, has retired due to the fact that the line will be operated by the Prairie Pipe Line Company, which acquired a 50 per cent interest in it. Mr. Gage was formerly vice president and general manager of the Lone Star Gas Company and has been singularly successful as an executive and financier.

Sylvester Dayson, general superintendent of the refining division of the Lion Oil & Refining Company at El Dorado, Ark., after spending several weeks in the East, is en route to his headquarters at El Dorado.

* * *

G. C. Conrad, producer and drilling contractor in the Artesia, New Mexico, oil fields, is in Bowling Green, Ky., on business. Mr. Conrad did considerable development work in western Kentucky before going to New Mexico.

* * *

H. S. Autrey, operator and producer of Shreveport, La., has been in San Antonio and the territory surrounding recently to give the country the "once over." He anticipates considerable development over Southwest Texas.

* * *

H. S. Lyne, consulting geologist to the South Australian Oil Wells Company, is (according to a Melbourne message) leaving Australia to take a position with the Standard Oil Company of New York as petroleum geologist.

* * *

A. G. Tackberry, manager of the Vacuum Oil Company's production department in the Gulf Coast territory since it was established three years ago, has resigned to enter the oil business for himself. He will open an office in Houston.

* * *

George H. Coyle, general superintendent of the Prairie Pipe Line Company, and J. J. Linehan, W. F. Conry and M. E. Fannin, assistants, attended the company's annual meeting of field officials at Independence, Kan., last week.

* * *

W. D. Vedder, president of the Vedder Oil Company, with headquarters at Pittsburgh, Pa., and Mr. McCormick, Cumberland County, Kentucky, operator, spent several days in western Kentucky looking over the various oil fields.

* * *

H. J. Vance, petroleum engineer with the leasing division of the United States Geological Survey in Casper, left early in the week for Long Beach and Los Angeles, Calif., where he will spend a month's vacation with relatives and friends.

* * *

A. J. Davis, formerly with the Mexican Eagle Oil Company, and in charge of Government drilling operations in Scotland under the war program, has gone to Venezuela as general manager for the Omnium Oil Development Company, Ltd.

* * *

Paul W. Brower has been appointed assistant superintendent of the production department of the Vacuum Oil Company with Houston headquarters. He was formerly with the production department of the Humble Oil & Refining Company.

* * *

J. H. Hassbeider, Bureau of Mines representative, who looks after development of oil lands owned by the Indians and the Government in San Juan Basin, is taking his annual vacation. He is expected to remain absent until after the holidays.

* * *

A. H. Hisey, president; Ralph Deitre, general superintendent, and George Grassier, secretary of the A. H. Hisey Oil & Gas Company of Newark, Ohio, are in Livingston, Tenn., to witness the bringing in of the company's test near Livingston, Overton County.

* * *

George M. Ball of Baltimore, who has opened an office in San Antonio and is developing some production in Southwest Texas, is on a trip to the East to be gone until about January 1. Mr. Ball has several producing oil wells in the Mirando Field in Webb County.

* * *

George G. Perdunn and Miss Flora Wolcott were married at the home of the bride in Billings, Mont., recently. Mr. Perdunn is general superintendent of the Illinois Pipe Line Company in the Rocky Mountain region and has been in continuous service of the company for 20 years.

* * *

T. A. Gowling, sales manager of E. J. Longyear Manufacturing Company, diamond core drill manufacturers, of Marquette, Mich., is making one of his periodic trips to Tulsa and the Mid-Continent Field. The company recently established a branch sales office and warehouse at Ponca City, in charge of Walter Klippel.

NATURAL GAS DEVELOPMENTS

HALF DITCHING DONE ON WEBB COUNTY LINE

SAN ANTONIO, Tex., Dec. 12.—About 50 per cent of the ditching for the Southern Natural Gas Co. pipe line extension from Calliham in McMullen County to Webb County has been completed and the laying of the pipe was only a little behind the ditching machines. H. D. Hull, vice president and general manager of the Southern Natural Gas Co., says the line will be completed ready for gas to be turned in by January 1. The main line is 83 miles long and with the gathering lines and extensions of smaller pipe in Webb County from the Cole to the Carolina-Texas Field about 100 miles.

By arrangement with the Houston Oil Co. that company will utilize part of the capacity of the line, which is a 12-inch line. Southern Natural Gas Co. is now using a considerable amount of gas from the Houston Oil Co.'s field in Live Oak County and this will be paid back in gas from the Webb County fields. Houston Oil Co. will also soon have considerable gas of its own in Webb County from acreage purchased some months ago. A connection was made a few months ago between the Southern Natural Gas Co.'s line, which extends from McMullen County to southern Live Oak, passing within a short distance of the Houston Oil Co. gas field on the Cartwright ranch, and the Houston Pipe Line Co.'s line from the Cartwright ranch to Houston.

Plateau Oil Co. and Texas Pacific Coal & Oil Co., which own jointly acreage in southern Live Oak and northern San Patricio, are seeking to bring back that field. Two good gas wells were completed early in 1925 on the block and Southern Natural Gas Co. made a 40-mile extension of its line to the wells using 8-inch pipe. Soon after the wells went off production and efforts to bring them back have failed. The No. 3 Freeman is now being drilled and will be tested out at the same horizon, at about 2,390 feet, within a short time.

VENTURA FIELD LINE IN OPERATION SHORTLY

LOS ANGELES, Cal., Dec. 12.—The Midway Gas Co. expects to have its new pipe line from the Ventura Field to Castaic in operation within a short time. The line, which extends for 53 miles from its Ventura compressor plant to the main line over the Ridge at Castaic, is now being tested.

The new Ventura gas line is constructed of 13-inch pipe, and has a total capacity of 20,000,000 feet of gas per day. The gas is put through the line under compression from a 12-unit compressor plant, operated at 1,900 horsepower. The gas is taken from the wells of the Shell Co. and the General Petroleum Corp.

Until this time a comparatively small proportion of the gas output of the Ventura wells has been salvaged, due to inadequate collecting facilities. The gas production of the field at present is estimated at about 60,000,000 feet per day, which is contrasted with about 14,000,000 feet early in the year before the deep Ventura zone was developed.

GAS FOR COUTTS-SWEETGRASS

A flow of gas of undetermined volume has been encountered at the Urban Co. well just outside the town of Coutts, Alberta, near the International boundary, at a depth of 2,300 feet. The hole was full of water when the sand was encountered and the force of the gas pressure is said to have lifted the tools in the hole, causing the line to part when they fell. The tools were quickly fished out and 6-inch casing will be run to shut off the water and make a test.

CONSUMPTION OF NATURAL GAS IN 1924 WAS HIGHEST ON RECORD

The consumption of natural gas in the United States in 1924 amounted to 1,141,482,000,000 feet, the highest on record, according to the Bureau of Mines, Department of Commerce. The figure represents an increase of 13 per cent above natural gas consumption in 1923 and is almost double the 1914 consumption. The estimated value of the natural gas at the wells was $105,779,000, at points of consumption $253,830,000. Production of natural gas in the country in 1924 amounted to 1,141,521,000,000 feet, the slight increase over consumption figures being due to a small consumption in Canada and Mexico of natural gas produced in the United States.

Oklahoma, with a production of 214,452,000,000 feet, led all the States; California, with an output of 189,692,000,000 feet, was second; West Virginia, with 182,285,000,000 feet, was third. Other large producing States were Louisiana, Texas, Pennsylvania, Ohio, Wyoming, Arkansas and Kansas, ranking in the order named. California, with a consumption of 189,692,000,000 feet of natural gas, ranked first in this respect; Oklahoma, with a consumption of 183,451,000,000 feet, was second, and Louisiana, consuming 163,469,000,000 feet, was third.

Increased production, as measured by deliveries to consumers, is recorded for most of the States, and in California, Louisiana and Texas, gains are recorded ranging between 33,000,000,000 and 58,000,000,000 feet; but decreased output of natural gas as contrasted with 1923 is recorded in West Virginia, Pennsylvania, Ohio and Montana. West Virginia passed from first in rank among the natural-gas producing States, which rank it had held since 1909, to third place, and Pennsylvania receded from fourth to sixth place. These changes mark the passing supremacy of the eastern States in the production of natural gas and a closer approach in the rank of the natural-gas producing States to those that produce petroleum, and emphasize the increasing use of casinghead gas—the gas obtained from oil wells.

The ratio of domestic (household) to total consumption of natural gas continued to decrease and in 1924 only 25 per cent of the total quantity was used for domestic purposes as contrasted with 27.5 per cent in 1923; with 33.4 per cent in 1922, and with 37.5 per cent in 1921. Nevertheless, the quantity of natural gas utilized by domestic consumers in 1924 increased 6 per cent and the number of domestic consumers in 1924 increased 209,000 to the record of 3,443,000.

The average value of the natural gas consumed for domestic (household) purposes in 1924, ranged from 29.6 per thousand feet in West Virginia to 91.2 cents in Missouri, and for all the States, increased to the record high of 54.0 cents, as contrasted with 51.4 cents in 1923 and with 38.2 cents in 1920. The average value of the natural gas consumed for industrial purposes in 1924 ranged from 2.6 cents in Colorado to 53.2 cents in Maryland and for all the States averaged 11.6 per thousand feet.

The quantity of natural gas reported as treated for extraction of natural-gas gasoline in 1924 was 1,016,276,000,000 feet, which is equivalent to 89 per cent of the total consumption of natural gas in the United States as contrasted with 87 per cent in 1923; 71.5 per cent in 1922 and 62.2 per cent in 1920.

In 1924 there was reported as consumed in the production of carbon black in the United States 156,514,000,000 feet of natural gas which is equivalent to 14 per cent of the total consumption of natural gas. This quantity is almost three times the quantity of natural gas consumed in the manufacture of carbon black in 1922.

SUPREME COURT RULES ON RURAL GAS SERVICE

OKLAHOMA CITY, Dec. 12. — The Oklahoma Supreme Court, in the case of the Oklahoma Natural Gas Co. vs. Vance et al, held that the Corporation Commission has no authority to require a public utility to furnish natural gas to people living outside the city limits where the utility has never professed or undertaken to serve the people of that community generally, even though it may appear that the gas company has a pipe line in close proximity to the property of such persons.

"The highways of this State are owned by the abutting property owners, subject only to an easement in the public to use the same for highway purposes, and the gas company is required, upon the request of abutting property owners, to furnish gas connections to such property owners where the pipe line is constructed along the side of the road on which such person's property abuts, but the gas company is not required to furnish connections or deliver gas to persons who may own property abutting the highway but whose property is not on the side of the road along which the pipe line is constructed."

The case was appealed to the Supreme Court by the Oklahoma Natural Gas Co. from an order of the Corporation Commission which ordered the gas company to furnish gas service to properties outside Oklahoma City and about 1,000 feet from a 2-inch pipe line of the gas company with a public highway intervening.

GRADY COUNTY LINE FOR OKLAHOMA CITY

OKLAHOMA CITY, Okla., Dec. 12.—A proposition made to the Chamber of Commerce and City Commission by J. B. Nichlos, of Chickasha, in which he proposed piping gas to Oklahoma City from Grady County and selling it at a gate rate of 15 cents per 1,000 feet has met the approval of the chamber officials and of Mayor O. A. Cargill, provided Nichlos has financial support to lay a pipe line and will put up a bond of $500,000 as a guarantee that he will furnish an adequate supply of gas for five years.

Engineers and appraisers of the Corporation Commission and the Oklahoma Gas & Electric Co. recently accompanied Nichlos engineers to the Grady County Field and examinations and estimates were made. P. B. Stockwell, of the Corporation Commission, reported a probable life of the field of seven to fourteen years. Nichlos engineers estimated a life of 25 to 30 years under conservation rules.

Stockwell estimated the aggregate available gas supply of the field is 71,000,000,000 feet. He said this would last about seven years if Oklahoma City and Chickasha consumed annually 5,250,000,000 feet, Norman 330,000,000, El Reno 200,000,000, Yukon 80,000,000 and the Hall-Briscoe line from the field to Duncan 4,500,000,000.

The Oklahoma Gas & Electric Co. now receives its Oklahoma City gas supply through three lines of the Oklahoma Natural Gas Co. It has declined to say whether it will buy Nichlos gas if it is piped here. It pays the Oklahoma Natural 38 cents at the gate.

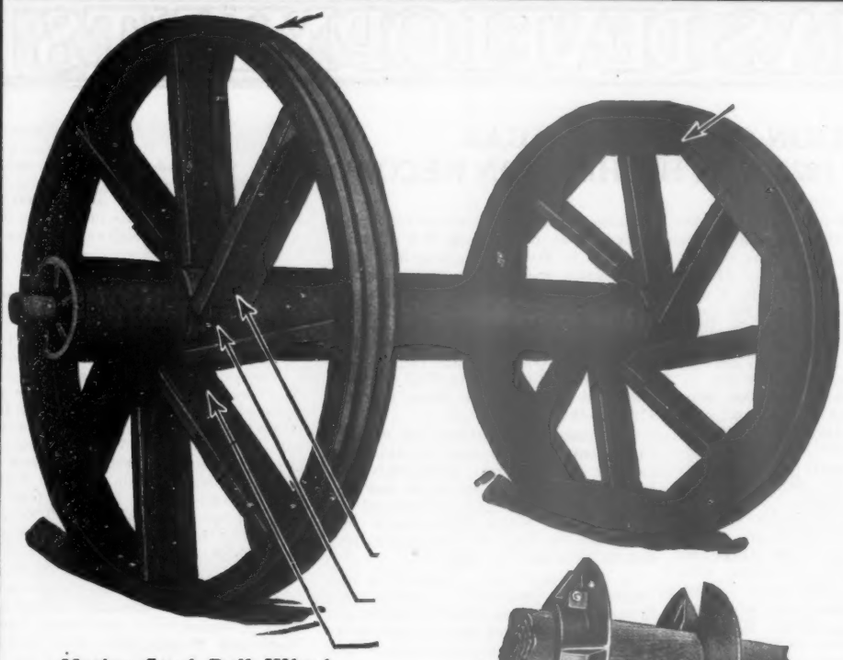
AIDS CUSTOMERS

CHATHAM, Ont., Dec. 12.—The Central Pipe Line Co. of Chatham, supplying Aylmer and other points in Elgin County, Ontario, from the Vienna, Richmond and Courtland fields, has decided to undertake the handling of natural gas appliances for the benefit of its customers, with a view to ensuring the latter the most satisfactory possible service through the efficient and economical use of natural gas. Careful tests are being made to determine the most satisfactory types of natural gas ranges and other appliances, preliminary to developing a sales and service department.

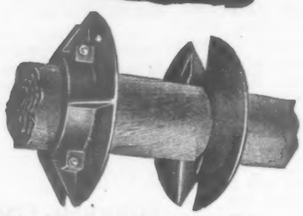
NATURAL GAS PRODUCED AND CONSUMED IN THE UNITED STATES IN 1924

State—	Produced and Delivered to Consumers Including Deliveries in Other States. Quantity (M Cu. Ft.)	Est. Value at Wells. Total	Aver. per M Cu. Ft. (Cents)	Consumed, Including Receipts from Other States. Quantity (M Cu. Ft.)	Val. Points Consump. Total	Aver. per (Cents)	Interstate Transportation. Quan. Piped Into State (M Cu. Ft.)	Quan'ty Piped Out of State (M Cu. Ft.)
Arkansas	36,616,000	$ 1,747,000	4.8	44,595,000	$ 5,977,000	13.4	7,979,000	.....
California	189,692,000	14,227,000	7.5	189,692,000	35,949,000	19.0	.....	.....
Colorado	47,600	1,700	3.6	47,600	1,700	3.6	.....	.....
Illinois	4,072,000	635,000	15.6	4,072,000	759,000	18.6	.....	.....
Indiana	998,000	357,190	35.8	2,377,000	1,278,000	53.8	1,536,000	157,000
Kansas	25,580,000	2,128,000	8.3	40,528,000	11,074,000	27.3	20,305,000	5,357,000
Kentucky	12,875,000	1,147,000	8.9	21,514,000	5,841,000	27.1	10,317,000	1,678,000
Louisiana	160,945,000	5,021,000	3.1	163,469,000	6,858,000	4.2	11,885,000	9,361,000
Maryland	.....	.....	.....	679,000	496,000	73.0	679,000	.....
Michigan	600	55	9.2	600	300	50.0	.....	.....
Missouri	71,000	6,525	9.2	5,394,000	4,617,000	85.6	5,323,000	.....
Montana	1,071,000	34,380	3.2	2,228,000	566,350	25.4	1,157,000	.....
New York	*6,196,000	1,853,000	29.9	16,506,000	9,685,000	58.7	10,346,000	36,000
Ohio	47,396,000	8,351,000	17.6	111,353,000	57,550,000	51.7	66,642,000	2,685,000
Oklahoma	214,452,000	14,926,000	7.0	183,451,000	34,016,700	18.1	34,000	31,035,000
Pennsylvania	105,863,000	25,037,000	23.7	123,932,000	52,905,000	42.0	31,789,000	13,720,000
South Dakota	3,000	275	9.2	3,000	2,500	83.3	.....	.....
Tennessee	1,200	110	9.2	1,200	450	37.5	.....	.....
Texas	†107,247,000	4,065,000	3.8	107,447,000	14,914,000	13.9	12,478,000	12,278,000
West Virginia	182,285,000	24,536,000	13.5	79,240,000	18,445,000	23.3	6,116,000	109,161,000
Wyoming	46,036,000	1,699,000	3.7	44,879,000	3,787,000	8.4	.....	1,157,000
Other‡	73,600	6,765	9.2	73,600	7,000	9.5	.....	.....
Total	1,141,521,000	105,779,000	9.3	1,141,482,000	253,830,000	22.2	186,586,000	186,625,000
1923	1,006,976,000	100,849,000	10.0	1,006,967,000	239,995,000	23.8	188,552,000	188,561,000

*Includes 12,000 M cubic feet consumed in Canada. †Includes 27,000 M cubic feet consumed in Mexico. ‡Alaska, Iowa and North Dakota.

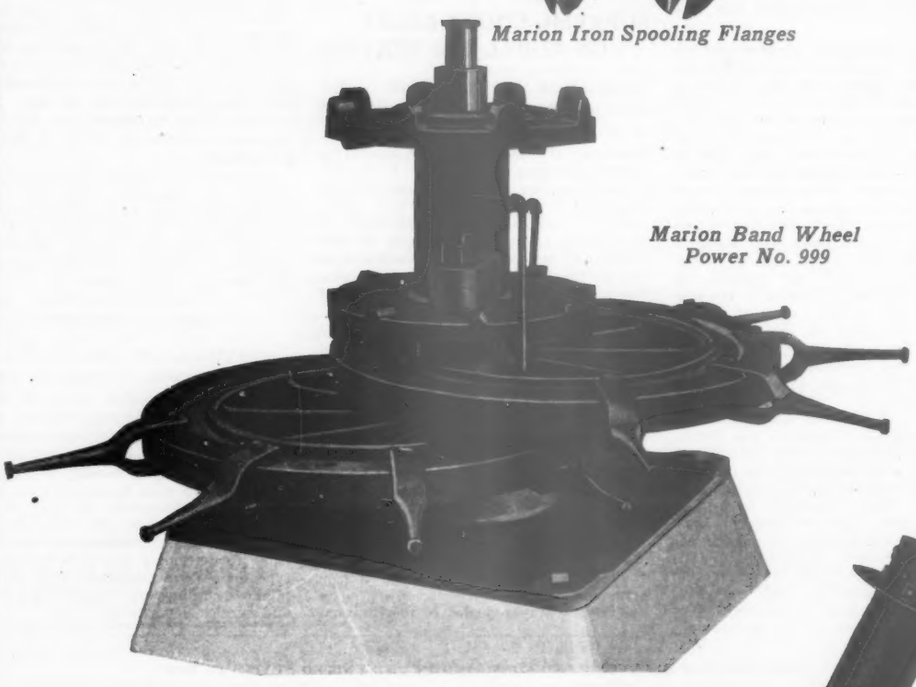


Marion Steel Bull Wheel



Marion Iron Spooling Flanges

Marion Gas Engine



Marion Band Wheel Power No. 999

It's Team Work That T

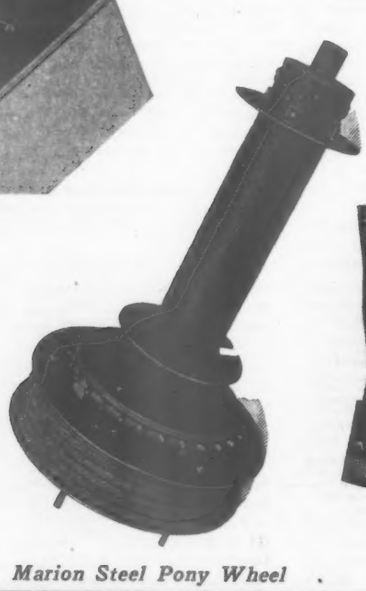
A draft horse and gasoline tractor have power, but they don't "hit it off" well when hitched together. They don't usually synchronize; however, two drafts pulling together are "some horses" and a single tractor is "a bear for eating up work."

Because there is great economy and volume attained by using one make of standardized machinery, we offer a large line of *metal* equipment for the oil fields.

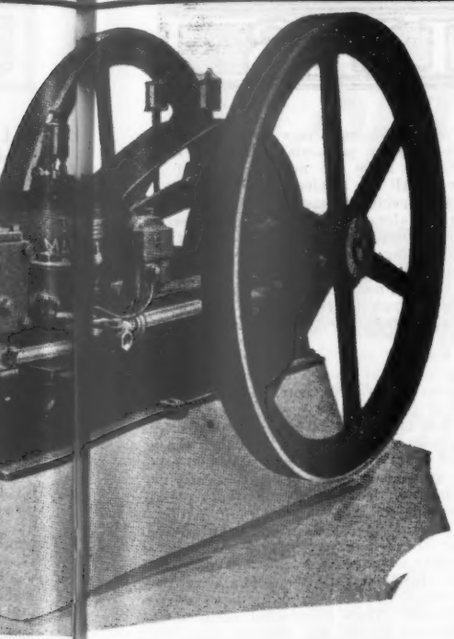
The following Bulletins will tell you about it. Any of these will be mailed to you on request.

Marion Machine, Foundry

Marion Chain Driven Sand Reel



Marion Steel Pony Wheel



Marion Peerless Reversible Clutch

Marionhill Pitman

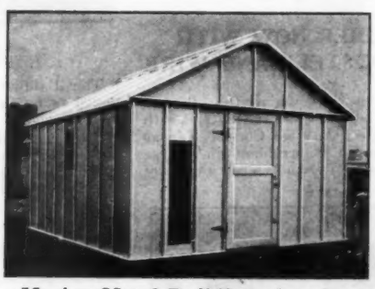
Turns the Trick

No. 198 Marion Steel Bull Wheels
No. 199 Marion Steel Derricks
No. 200 Irish Pulling Machines
No. 202 Marion Peerless Reversible Clutch
No. 203 Marion Gas Engines
No. 205 Marion Band Wheel Powers
No. 206 Marion Sand-Roof Working Barrel
No. 214 Marion Hi-Test Sucker Rods
No. 217 Marionhill Pitmans
No. 230 Marion Metal Buildings

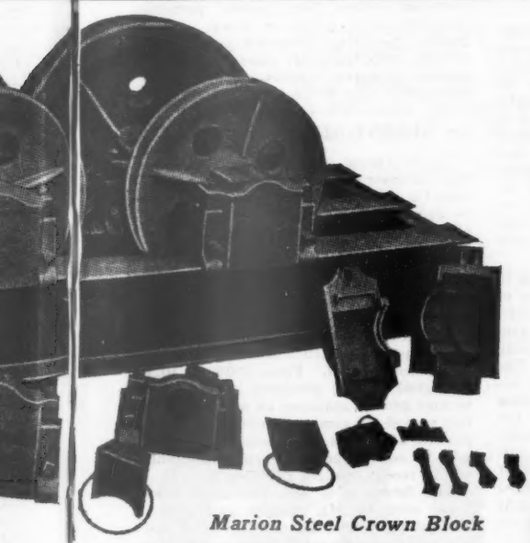
Use the Marion Line of Oil Well Machinery and know what it means to get full production through the principle of team work.

y & Supply Co., Marion, Indiana

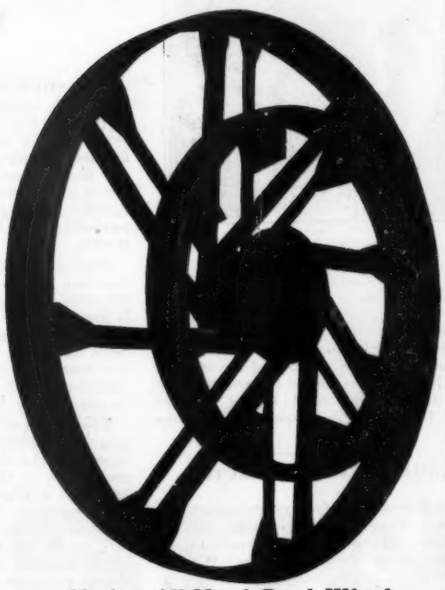
Marion Hi-Test Sucker Rods
(Name registered)



Marion Metal Buildings for the Oil Fields



Marion Steel Crown Block



Marion All-Metal Band Wheel

EQUIPMENT AND SUPPLIES

NEW VESSEL TO HAVE 32-INCH GATE VALVE

Blue prints and specifications for the largest valve ever ordered from an American manufacturer for an American-built passenger steamship have been submitted by the Chapman Valve Manufacturing Co., of Indian Orchard, Mass., to the William Cramp & Sons Ship & Engine Building Co., of Philadelphia, in connection with the construction of the steamship Malolo which, when completed, will be the largest and fastest high-powered passenger steamship ever built in this country.

The valve in question is a 32-inch gate valve. The Chapman Co. has already received a large order for other gate valves for the fuel tanks of the Malolo which will have a total capacity of 4,590 tons of fuel oil—enough fuel, if it were gasoline, to run a small automobile for 350 years, driving from sunrise to sunset, during which time the car would cover a distance of 23,460,000 miles or 880 times around the earth.

The Malolo is being built for the Matson Navigation Co. for the San Francisco-Honolulu run. She will be launched this coming spring and will be placed in service in the spring of 1927. Her speed of 22 knots will enable her to make the round trip in eight days, or in four days less than the fastest vessel now plying between the two ports.

HAL GRUBER NOW WITH BLACK STEEL AND WIRE

H. R. Gruber, known to the oil man as "Hal," has become affiliated with the Black Steel & Wire Co., of Kansas City, Mo., as vice president in charge of distribution of Black steel and wire

H. R. Gruber

rope throughout the Mid-Continent Field.

By virtue of 20 years' experience in selling wire rope, Mr. Gruber enjoys an extensive acquaintance among the oil fraternity. He was one of the original wire line boosters in the oil country, and was formerly manager of oil country sales for the Williamsport Wire Rope Co.

NAMES NEW DISTRIBUTOR

The Lucey Manufacturing Corp., Chattanooga, Tenn., has announced the appointment of the Bradford Supply Co. as its exclusive distributor in Wichita Falls, Tex., and adjoining territory—including Wichita, Archer, Clay, Baylor and Wilbarger Counties. A complete line of Lucey equipment and parts will be carried in stock at all times by this new distributor.

MODERN EQUIPMENT IN BALDWIN HILLS FIELD

A very good idea of the modern equipment used throughout the Baldwin Hills Oil Field between Culver City and Inglewood, Calif., can be gained from the accompanying picture. While this picture does not show the modern equipment in use, it does show that practically all the derricks in this field are all-steel; and it follows naturally that all other equipment used is equally modern in comparison, which is the fact in the case.

Baldwin Hills Field, California.

The Baldwin Field frequently is referred to by California operators as "the field of steel." More than 90 per cent of the steel derricks in this field are Emsco All-Steel Tubular Reinforced Derricks and a large percentage of all the other equipment used also is Emsco All-Steel Products manufactured by the Emsco Steel Products Co. of Los Angeles, Calif. It shows in a forceful manner the transition from wood to steel that is now taking place in the oil fields of the world—a transition that will be much more rapid from this time on inasmuch as greater strength and the elimination of fire hazard are absolutely essential now that extraordinarily deep drilling and high pressure gas both are established facts in oil field operations.

The Baldwin Hills Field will prove a revelation to operators who are not as thoroughly familiar with all-steel derricks and equipment as are the operators in this "field of steel." Here they will see every modern device produced for fast, safe and efficient drilling and pumping operations. And they will see results obtained by the use of this modern equipment that were considered impossible even a couple of years ago.

Like every other major industry, the petroleum industry must advance in perfect step with human, scientific and engineering progress. This is definitely established as an age of steel in all lines and branches of industry, and steel it must be in the petroleum industry as well. Forunately, steel offers many advantages not otherwise obtainable, and the petroleum industry will profit immeasureably by this transition to all-steel equipment.

SEASONAL DULLNESS BEING FELT IN TUBULAR GOODS; PRICES FIRM

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 14.—The pipe trade continues dull, as it has been in the past few weeks, this being entirely seasonal, and no particular increase in market activity is expected before about the first of the year. Production is at about two-thirds of the full pipe mill capacity, and a fourth to a third of the production is going to replenish mill stocks.

Buying of oil country tubular goods has been light lately, in accordance with the time of year, chiefly because winter is just at hand, when active drilling operations are largely suspended in most fields and roads are in bad shape. There is a subsidiary influence, that jobbers and consumers wish to have stocks as light as possible for the January 1 inventory.

The principal decline in demand for pipe mill products in the past two or three months has been in oil country goods, but in the past few weeks there has been a slight decrease in buying of merchant pipe, by jobbers generally, on account of the time of year. Jobbers can hardly be reducing stocks of merchant pipe, as they have been carrying almost no stock for several months.

As usual there will be a seasonal swing later on towards heavier buying. Just at present there is not much prospect that jobbers will place their orders particularly early, for shipment beginning immediately after January 1, but they are expected to begin buying at about that date. There is always a question how much the statistical position of oil, as to prices, production and stocks, really influences drilling in the long run and in the aggregate. Some observers claim the influence is overrated, as to actual drilling. It is said, however, that the statistical position does have much influence upon the attitude of jobbers, so that advances in oil prices at this time would stimulate jobbers to stock up after January 1.

There are reports of some shading in merchant pipe prices by one or two of the mills, but in general prices are well maintained as they have been quite generally since the present general basing prices were issued April 19, 1923. The fact that some steel products have declined so much from the prices ruling at that time has been a stimulus to the pipe mills to maintain prices closely, so as to furnish no occasion for an outright reduction, it being recognized that if the pipe market were once dislodged from a well established position it might be difficult for it to establish itself equally well at some other level.

As to the steel market in general, it continues to give a remarkably good account of itself. While there are variations in individual items, the market as a whole continues very active, with the buying of a particularly healthy character as there are numerous repeat orders. All the evidences, from the tonnages, specifications and deliveries called for, is along the line that the steel is going into actual consumption, not accumulating in buyers' hands. Thus it appears that steel consumption in general is running much higher than last summer, even though in view of the season one might expect the trend to be the other way.

Finished steel prices have been firming up right along, but with very few concrete advances, and there are none to be reported this week, except in that sellers below the recently advanced prices of 2.50 cents on blue annealed sheets, 3.35 cents on black sheets and 4.60 cents on galvanized sheets have practically disappeared, leaving the market plainly quotable at these figures.

A year ago steel prices were advancing at various points and the lack of similar advances now does not mean that the fundamental conditions are less strong. Rather the mills have a new attitude. They found that some of the advances a year ago did not hold. The advances were chiefly on paper and did the mills no good, while when they came off it reflected unfavorably on the steel situation. Hence the mills are indisposed now to force prices up, preferring to let them work up naturally if they will.

Mill operations continue at the high rate of November.

Pig iron is dull and unchanged.

ENGINEERING COMPANY HAS ENGINE BULLETIN

The Climax Engineering Co., Clinton, Iowa, has just issued a series of bulletins covering the various models of engines which it manufactures.

Bulletin "A" describes the "K" series, four-cylinder, 5-inch by 6½-inch engine. Bulletin "B" covers the "T" series, four-cylinder, 5½-inch by 7-inch engine. Bulletin "C" describes the "R" series engine, which is made in two models—Model "R4U" covering the four-cylinder, 6-inch by 7-inch engine and Model "R6U" covering the six-cylinder, 6-inch by 7-inch engine. These series of engines develop power ranging from 35 horsepower to 130 horsepower.

Bulletin "D" covers the "K" and "T" series portable power houses designed for operating cotton gins, hoists, portable sawmills, mine ventilators, power pumps, lumber operations, generator power, etc., in fact, practically all places where industrial gasoline engines of 44 to 75 horsepower may be used.

NUGENT NEW PRESIDENT

W. J. Nugent, vice president and general manager of the Nugent Steel Castings Co., Chicago, was elected president to succeed Charles Piez at the meeting of the directors held in Chicago on October 27.

Prentiss Coonley was elected vice president and C. A. MacDonald, secretary, was elected to fill a vacancy on the board of directors.

Mr. Nugent has been associated with the company since 1918 when the present plant was erected. From 1918 to 1921 he served as vice president and in 1921 became general manager as well. During this period the company enjoyed a steady growth and it is announced that there will be no change in policy as a result of the recent changes in officials.

The interests of Mr. Piez have been taken over by Mr. Nugent and others. The company was organized in 1916 and has made electric steel castings since its inception. A large electric annealing furnace of reciprocating type was recently installed and the entire output is now annealed in this furnace.

In Spite of the Competition *offered by a host of old-style swabs*

The Correct Principle in Swabbing

Continues to Win *and to* Lead

Volume of oil produced will always be the primary consideration in choice of a swab, and in this respect the GUIBERSON Swab has broken all former records. It is a physical impossibility for an old-style swab (with fluid pressure striving to *overcome* the contact between rubbers and casing walls), to produce as much oil as a GUIBERSON (with the fluid pressure working to *increase* the contact of the cups with the casing walls). With a GUIBERSON, the heavier the load the tighter do the cups hug the walls. With old-style swabs the reverse is true.

Nor do old-style swabs possess these additional advantages offered by the GUIBERSON: (1) Ability to pass through badly indented casing, (2) Rubbers which can be easily by-passed by fluid when running in, (3) Ability, in reverse position, to serve as a flow packer or flush perforations—and a dozen other exclusive advantages.

If you believe in modern, scientific equipment, use a GUIBERSON.

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
CALIFORNIA BRANCH: 1506 Santa Fe Ave., Los Angeles

402 W. First St., TULSA
318 First Nat'l Bank Bldg., HOUSTON
506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

ZERO HOUR
in the bunkhouse

"Hello, Boss, how's things up at the office?" inquires Interstate Joe, as the Construction Foreman enters the bunkhouse, after spending a day at headquarters.

"Funny thing happened up there," comments the Boss. "First thing in the morning the 'Old Man' says to me, 'Charlie, how's them four new hot oil pump foundations?'"

"'Fine,' I says. 'They're level, plumb and the concrete is the hardest stuff I ever laid—just like granite. They'll last longer than we will,' I told him."

"'Good,' says the 'Old Man.' 'Fine! Now listen to me, Charlie. Put the whole gang on those foundations tomorrow, and tear everyone of them to pieces. The Chief Engineer will give you the new foundation plans. Going to use a different pump than we had figured on at first. Thought the hot oil pump question was settled until we had the TRANSIT Block Valve Pump explained to us. It seems the TRANSIT people had been building for years and years just what we need now. They've got a great hot oil pump, Charlie, and it's going to save us more money in a year than your foundations will cost'."

"That's just what he said, boys," explains the Foreman, and goes out to have a last farewell look at his foundations.

"Sounds like 'Bull' to me," offers Nosey, to Interstate Joe.

"Nosey, you ought to have an Alemite connection in each ear," replies Joe, "so we could give you a new set of brains occasionally. Were you ever in a refinery?" continues Joe.

"I was," replies Nosey.

"And did you ever see a pump with the fluid end covered with frost and ice?" inquires Joe.

"I did," replies Nosey.

"And did you ever see a pump with the fluid end red-hot?" questions Joe.

"Not by a damsite," snorts Nosey.

"Well I did," replies Joe, "and furthermore, the name plate on that pump read 'TRANSIT 12x9x18 Block Valve Pump'."

"You're a liar," snaps Nosey, forgetting himself.

Next morning a nurse in the Emergency Ward was surprised to hear the new patient yell, "Take that TRANSIT pump t'ell out of this bed—the damn thing's red-hot."

NATIONAL TRANSIT
PUMP & MACHINE CO.

Oil City, Pa.

District Offices: New York Philadelphia Pittsburgh
Cleveland Tulsa Houston Denver

TINSLEY BOTTOM A RICH SQUARE MILE OF TENNESSEE OIL LAND

By Vern T. Whitney

COOKEVILLE, Tenn., Dec. 12.—The Tinsley Bottom Pool, in Tennessee, though one of the latest developed in this section, is important because of the large flush production and because it is really the first production of magnitude in the State.

The pool lies in northern Tennessee, in a large horseshoe bend of the Cumberland River, partly in Clay and partly in Jackson County, surrounded by the foothills of the Cumberland Mountains.

Several years ago, C. E. Loney, of Denver, Colo., drilled a wildcat at Tinsley Bottom, on the Williams farm, where a good showing of oil was found, but on account of the remoteness from a shipping point, and the excitement in southern Kentucky, then at its height, Loney abandoned the property and went to Kentucky.

After the boom in the Blue Grass State subsided, A. E. Dafoe, of Bowling Green, Ky., on a scouting trip, through northern Tennessee, learned of the abandoned well which had filled and was seeping oil. He worked the geology as best he could from surface indications, determined to his own satisfaction that an oil pool could be developed and proceeded to lease as much acreage as he deemed to be within the prospective limits of the pool.

In 1923, Dafoe began drilling, but encountered many unusual difficulties, enough to discourage anyone but an experienced and determined wildcatter. The first well was brought in on the Williams farm, a short distance from the old Loney well, resulting in a fair producer. However, no interest was taken in the pool until the first well on the Hamp Lynn farm, to the west of the Williams, came in flowing at the rate of several hundred barrels per day from a sand only 450 feeet deep, attracting scouts from all parts of the country and precipitating a miniature boom.

Leases on all sides of the Dafoe holdings were taken, some at very high figures, a number of machines were moved into the field, and a development campaign was on in earnest.

However, in spite of tests in an easterly and westerly direction from Tinsley Bottom, no wells of value were brought in except in the horseshoe bend, on the Dafoe properties, and on part of the Draper farm, which was purchased by the Rex & Pyramid Co. This farm adjoins the Williams and the Lynn.

So far Dafoe and his associates have drilled 18 wells, of which 13 are producers; the Rex & Pyramid Co. has drilled two wells, both producing. Sixteen other tests made in attempts to extend the pool, have been dry.

The Tinsley Bottom Pool, as it is now developed, covers an area of one mile square. White tests outside of the developed pool have been discouraging, it is not impossible that it is more extensive than the present limits. No drilling has as yet been done to the southwest, which section from data now available would seem to be the direction which the pool will take.

The Stoll Oil Refining Co., of Louisville, Ky., recently completed its gathering system from the field to Windle, on the T. C. R. R., where the oil is loaded into tank cars for the Stoll company's Louisville refinery. The oil tests 43.2 gravity and refinery tests show it high in gasoline content. The producers receive Somerset prices, less 19 cents.

The pipe line at Tinsley Bottom is operating efficiently, and plans are under way to install a light plant, so that the Stoll company will be able to operate 24 hours a day.

The entry of the Stoll Refining Co. into Tennessee means much to the future development of Clay, Jackson and Overton Counties, through which the line runs and will no doubt be the cause of a large number of tests being drilled.

Just one year after the Lynn No. 2 was drilled in and put to pumping, it commenced to flow, filling a 250-bbl. tank over night. A number of the other Dafoe wells are flowing, while the ones that have been placed on power are making from 3 to 15 bbls. The storage situation is being well taken care of, as all the oil that was in storage has been run.

Looking across Tinsley Bottom, Clay County, Tennessee, from No. 5 Hamp Lynn.

An important test is now being drilled on the Flat Creek anticline, about 10 miles from Tinsley Bottom, and about 1 mile from the pipe line. According to geologists who have looked over this section, the test is well located. Other structures that have been worked out by the Tennessee Geological Survey, and recently reported in The Oil and Gas Journal, are the Crawford Mill anticline and the Dry Ford anticline, where several locations have been made that will be started shortly.

Tennessee, unlike Kentucky, has good roads the year 'round. In fact, the Tinsley Bottom Pool is really an excellent winter pool, as the roads leading to it are all hard surfaced and good any time of the year. The pike from Cookeville and Celina runs right through the oil fields, and there is an express bus service that goes through the field every day, making deliveries of freight and express, so that the field is an ideal one to operate at all times of the year.

Kentucky operators are in the habit of shutting down during the winter months, due to the difficulty of moving roads, and are very high in their praise of Tennessee roads.

This condition, the completion of the pipe line and the paying of eastern Kentucky prices for crude should lead to large development in the several counties of northern Tennessee. The oil producer who wants to keep busy can move to Tennessee for the winter, where he can keep the drill going, instead of going to Florida.

There is a good hotel at Cookeville, at Butler's Landing and at Celina, where the producer can make his headquarters.

The TWO EXTREMES

China has the honor of operating one of the smallest among all the "Western" Gas Engine plants throughout the oil fields of the world. It consists of two 35 H.P. "Western" Oil Field Engines, operating on natural gas or liquid fuels.

One of the largest users of "Western" Engines is located in our own domestic oil fields. Altogether they own and operate more than twenty thousand horsepower in "Western" Gas Engines of the types built especially for oil country work.

These two "Western" plants represent about the two extremes in point of horsepower. The engines above visualize the extraordinary difference in their sizes as well as it is possible to do in this space.

There are hundreds of "Western" Engine plants, ranging from twenty-five to a thousand horsepower, in oil country service, as well as a large number ranging from one thousand to twenty-five thousand horsepower. The carefully kept records of these plants have proved that "Western" Gas Engines are supreme for every branch of service in oil country work from pumping, pulling rods, and cleaning out wells, to gasoline pumping, boosting, extraction, and central power plant duty.

We will furnish any operating company complete records of "Western" Gas Engine plants of all sizes in all classes of oil country service for consideration and comparison.

WESTERN MACHINERY COMPANY

General Offices and Factory: 904 North Main Street
Los Angeles, California.

720 So. Kenosha St., Tulsa, Oklahoma.

San Francisco Offices and Factory: Eighteenth and Alabama Streets.

1106 Nineteenth St., Bakersfield, California.

HOPE
Vertical
Gas Engine
Compressors
Even if the Hope Vertical were no better, mechanically, than other compressors, it still would be the least expensive unit you could buy because of its extreme compactness and the resulting lower cost of building, land, plant accessories and installations. But, in addition, it will give you a year-after-year operating economy — including upkeep, depreciation and interest —probably lower than any other type affords, and certainly no higher. The Hope Vertical gives you the biggest return per dollar of investment.
Let us send the specifications.
HOPE ENGINEERING & SUPPLY CO.
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CONTRACTORS
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Engineering & Supply
COMPANY
DESIGNERS
MANUFACTURERS
MT. VERNON, OHIO, U. S. A.

ONTARIO GOVERNMENT ACQUIRES RIGHTS TO HELIUM PRODUCTION

By Victor Lauriston

CHATHAM, Ont., Dec. 12.—The discovery of helium gas—the richest in quality in the British Empire—at Inglewood, near Brampton in Peel County, is announced by Premier Ferguson of Ontario, who said the Province of Ontario had taken over the helium rights on the properties for a consideration of $40,000. The wells have been turned over to the University of Toronto for further research.

While commerce and industry is not expected to receive immediate benefit from the discovery, the explanation is forthcoming from Prof. J. C. McLennan of the University of Toronto that scientific research work at the university will be immensely benefited along certain lines. Previously the university authorities have deemed themselves fortunate to be able to get helium in small quantities from Alberta.

The most probable immediate benefits to industry, according to Professor McLennan, are linked with the electrical development field. Power generation is said to be facilitated to such an extent by the use of helium that existing plants may automatically have their power output increased 30 per cent. The helium discovery in Ontario is also of importance in mechanical fields.

The location of the helium find is on Lots 4 and 6, Caledon Township, 1 mile north of Inglewood. The gas is believed to exist all around the neighborhood, but those farms on which the Ontario Government has purchased helium rights belong to J. T. McCannell, Harry Fudge, John Kidd, Archie McColl, George Henry, W. T. Bulmer, J. P. Graham, Thomas Graham, Frank McDonald and W. T. Foster. The Government and the university maintained the strictest secrecy in connection with the discovery until the province had acquired all the helium rights.

Carefully Guarded

Prof. J. C. McLennan, whose war work with helium gas has made him an outstanding authority on the subject, has issued the following statement in reference to the discovery:

"Up until 1917 there was probably not more than 10 to 20 feet of helium obtainable in the world for scientific or other purposes, and its value up to 1917 was in the neighborhood of $1,500 per foot.

"As helium is an inert, non-explosive gas, and as it is next in lightness to hydrogen, the latter a most explosive gas, the suggestion was put forward to the British Admiralty that we should try to find enough helium to fill our Zeppelins and other kind of airships for war purposes. Helium, it was understood, would have about 92 per cent of the lifting power of hydrogen.

Under instructions from the Admiralty, Professor McLennan in 1916 made an exhaustive survey of the available sources of helium, and found that, while in Europe the helium in the natural gases was negligible, in the United States there were large supplies of natural gas, particularly in Texas, with a helium content of from 2 per cent to 1 per cent. The gas from some of the shallow wells in the United States was found to have a helium content even higher than 1.5 per cent. In Canada it was found that most of our natural gases contained helium either in traces or in percentages not greater than .35 per cent. The largest field in Canada containing helium to the extent of .35 per cent was the Bow Island Field in Alberta. This field supplied Calgary and the neighboring towns with gas for the production of light, heat and power.

The Admiralty in 1917 authorized Professor McLennan to attempt to extract helium from the natural gas in the Bow Island Field. As a result of work in this direction a plant was designed, constructed and operated, and during 1917-20 helium to the extent of about 20,000 feet was extracted. It was shown that from the large supplies of natural gas available in Alberta it was possible to extract helium at a cost of between 5 and 10 cents a foot. Similar results were obtained by the United States authorities with their natural gas.

May Erect Plant

During the past two years, the Mines Branch at Ottawa, with the assistance of R. T. Elworthy, M. A., has made a re-examination of the natural gases of Canada for helium, and found that the gas from the field in the neighborhood of Inglewood, near the forks of the Credit in Peel County, was much the richest in helium of any of the natural gases in Canada. In fact, this gas has the highest helium content of all natural gases as yet discovered in the British Empire.

The wells in the Inglewood Field are shallow, and the gas supply moderate in amount, but it is estimated that they will provide at least 100,000 feet of helium per year.

The Natural Research Council of Canada has expressed the opinion that a helium extraction plant should be set up in the Inglewood Gas Field. The Government of Ontario on being informed of the existence of such a rich supply of helium-bearing gas in the province, immediately took the necessary steps to conserve it for scientific and possibly for industrial purposes. There is considerable demand for helium by the research workers in all the universities of Canada, and none is available except a moderate supply held by the University of Toronto as a result of operating the experimental plant in Calgary.

As the University of Toronto has installed a costly plant for carrying on low-temperature researches by the use of liquid air, liquid hydrogen and liquid helium, with which temperatures within one degree of the absolute zero can be obtained, it is clear that they wish to conserve the supply of helium. Besides, the meagerness of their supply limits in a measure the scope of their researches, and in order to extend these they are anxious to increase their supplies.

According to Professor McLennan, it is not practicable to obtain supplies of helium from the United States as its export from that country is prohibited by law. Even in the United States its use by scientific men or bodies is rendered embarrassing by certain legal restrictions imposed with the object of conserving the helium as far as possible for war purposes. It is hoped, therefore, that the university may succeed in making the necessary arrangements to establish a helium-extracting station in the field just secured by the province.

Value in Electrical Field

Recent experiments by the General Electric Co. have shown that if electric generators are surrounded with an atmosphere of hydrogen the load in existing generators would be increased by 30 per cent. This is because hydrogen conducts heat away from the machine about six times as quickly as air. Helium is a better conductor of heat than hydrogen and, if it were available in quantities, it might be used as an inert, non-explosive gas for surrounding the electric generators of the Ontario hydro-electric system.

Helium, too, may find uses as filling for transformer cases and for surrounding high-tension switches in place of oil, which is so highly inflammable. The use of helium for this purpose would eliminate the possibility of fire to a large extent.

Recent experiments have also shown that helium, hitherto considered chemically inert, can, by means of electric action, be put temporarily in a metastable state, that renders it capable of entering into chemical combination with other elements. There are indications that it may be possible with helium to make compounds with explosive properties as high as 30 times that of the most powerful explosives known. Experiments in this direction are only in their initial stages;

while the results are promising from a scientific point of view, it is too early to state exactly their full significance.

It has been found, too, that if divers be made to breathe a mixture of helium and oxygen in place of air—air being a mixture of nitrogen and oxygen—they are able to carry on their operations at at greater depth than formerly. Helium diffuses out of the blood more quickly than nitrogen, and consequently the duration of the period of decompression can be lessened by breathing the helium-oxygen mixture instead of breathing ordinary air. In tunnelling and in caisson work, where men have to work in an atmosphere of compressed air, the use of helium and oxygen as an atmosphere would have advantages over air for the same reasons as those given in connection with diving operations.

In the scientific field helium is unique in that with it we can obtain the lowest temperature. With liquid helium a temperature of 450 degrees Fahrenheit below zero can be reached. It provides a means of investigating the properties of various substances at extremely low temperatures. With the temperature obtainable with liquid helium, all substances become solidified, which, under ordinary conditions, exist in the gaseous state. In the low temperature research work carried out in the physical laboratory of the University of Toronto, liquid helium is being extensively used to exploit this field of research. There are only two other laboratories in the world where investigations of this kind can be carried out, namely, at Leyden in Holland and at Berlin in Germany. With a helium-producing station to support the low-temperature research work being carried on at Toronto the university would be placed in an unique position as regards low temperature investigations.

EASTERN FIELDS

(Continued from Page 48)

Jamieson farm through the Big Injun sand. It is a very light pumper—less than 1 bbl. a day.

Small Gasser in Hancock County

On Kings Creek, Butler district, Hancock County, Miller & Co. have a very light pumper in the Berea grit at a test on the Sara Carothers farm. Located in old territory, 5 miles west of Pine Grove, Greene district, Wetzel County, the Carnegie Natural Gas Co.'s test on the Henry Springer farm is a small gasser in the fifth sand at a total depth of 3,080 feet. In Collins Settlement district, the Pittsburgh & West Virginia Gas Co. completed a test on the W. J. Wilson farm. It is a fair gasser in the fourth sand. In the same district, the Dunmore Oil & Gas Co. has the rig completed for a test on the A. L. Harper farm. In Courthouse district, E. G. Smith and others have a rig up on the Martin Whalen farm. On Patterson Fork, Ten-Mile district, Harrison County, the Patterson Fork Oil Co. has the rig completed for No. 16 on the R. T. Lowndes farm.

Wetzel County Tests

In Center district, Wetzel County, the Manufacturers Light & Heat Co. has started to drill a test on the A. T. and Rachel White farm. In the same district, the same company is due in the Big Injun sand on the Jason Lemasters farm and drilling at 2,800 feet on the S. N. Harlis farm. The same company is drilling at 2,925 feet on the Patrick Clark farm. In the same district, the Carnegie Natural Gas Co. has made a location on the C. T. Goodwin farm. In Union district, Marshall County, the Wasmuth-Kallihan Oil Co. started to drill on the Mary A. Riley heirs' farm. In the same district, the Narrows Oil & Gas Co. has a rig up on the Samuel Morris farm.

Late Completions

At the close of the week of development work, the West Virginia fields completed light wells, none of enough importance to attract attention. In Green district, Wetzel County, the Carnegie Natural Gas Co. completed to the Gordon sand, 2,964 feet, a test on the John Springer farm. It is a fair gasser. In Proctor district, same county, J. O. Shrader completed in the same formation his test on the Nathaniel Williams farm, good for less than 2 bbls. a day. The Pittsburgh coal measure at these two wells is reached at a depth of 895 and 837 feet, respectively. On Little Paw-Paw Creek, Paw-Paw district, Marion County, the Owens Bottle & Machine Co. completed a gasser in the Gantz sand at a second test on the David Cunningham farm.

In Union district, Lincoln County, the Ohio Fuel Oil Co.'s second test on the Charles Keeny farm and the Grant Gas Co.'s test on the Stanley Hudson farm are gassers in the Berea grit. In Carroll district, the Columbia Gas & Electric Co. has a gasser in the same formation at a test on the C. C. Roberts farm. In Duval district, the Grant Gas Co.'s test on the McCallister farm is a fair gasser in the Berea grit. In Union district, C. T. Ray has gassers in the Berea grit at a second test on the John L. King farm and at a test on the Mary Abbot farm. .

Showing for Good Producer

In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has drilled No. 5 on the D. W. Keller farm into the Gordon sand and showing for a good producer, estimated to be good for close to 100 bbls. a day. The Cmmercial Gas Co.'s test on the Florence Keyser farm, in McComas district, Cabell County, is a gasser in the Big Injun sand. This well was drilled to a total depth of 3,280 feet. Nothing was found in the lower sands. In Murphy district, Ritchie County, the Hope Natural Gas Co.'s test on the John R. Cunningham farm is a gasser in the Big Injun sand.

In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co.'s test on the J. M. Campbell farm is dry in the Big Injun sand. In Troy district, Gilmer County, the Mud Lick Oil & Gas Co.'s test on the Edward Garrett farm is a gasser in the Big Injun sand. In Union district, Ritchie County, the Hope Natural Gas Co.'s tests on the B. C. Bee and W. M. Jett farms are both gussers in the Big Injun sand. In Clay district, the same company has a gasser in the same formation at a test on the C. F. Broadwater farm.

In West Union district, Doddridge County, the Hope Natural Gas Co.'s test on the T. Maulsby farm is a fair gasser in the Big Injun sand. The Pittsburgh & West Virginia Gas Co. has a gasser in the Gordon sand at a test on the E. Clark farm, in Collins Settlement district, Lewis County. E. C, McCall & Co.'s test on the Earl Garrett farm, in Troy district, Gilmer County, is a gasser in the Big Injun sand.

Drilling and Starting Tests

In Union district, Lincoln County, the Grant Gas Co. is rigging up on the Thomas Stanley farm. In Duval district, the same company has started to drill on the Thomas F. Nelson farm. In Union district, the Carter Oil Co, is drilling a second test on the Nancy Hodge farm. In Carroll district, the Cambridge Gas Co. is due in the Berea grit on the J. D. Miller farm. The Ray Gas Co. is drilling on the Frank Pridemore farm. In Curry district, Putnam County, the Grant Gas Co. is fishing for a string of tools on the W. H. Carpenter farm.

In Murphy district, Ritchie County, Bickerstaff & Co. have the rig completed for a test on the F. V. Mitchell farm. In the same district, J. L. Davis has a rig up on the J. S. Goff farm. In Carroll district, Lincoln County, the Maul Rock Oil & Gas Co. is through the Berea grit at a test on the Martha Hicks farm and waiting for a shot. In the same district, the Columbia Gas & Electric Co. is rigging up on the E. W. Sites farm.

In McClelland district, Doddridge County, the Norr Bell Oil & Gas Co. has started to drill a test on the Mary Shrader farm. In Union district, Tyler County, Knowlton & Thomas are moving tools to a location on the Samuel McDougal farm. In the same district, Albert Neely has started to drill on the Elizabeth Henderson farm. The Manufacturers Light & Heat Co. is rigging up on the D. A. and F. R. Fair farm, in Liberty district, Marshall County. The same company is building a rig on the A. L. Evans farm. In Center district, Wetzel County,

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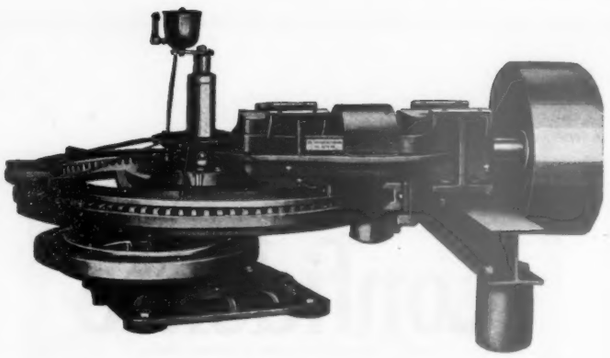

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Wade & Boundy are cementing a cave at their test on the William Smith farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. is rigging up on the J. D. and M. A. Myers farm.

In Walker district, Wood County, the South Penn Oil Co. is due in the sand on the John D. Walker farm. In the same district, the Congdon-Woodard Oil Co. has the rig completed for No. 9 on the Elgie Graht farm. In Union district, Tyler County, Morgan Brothers are moving a drilling outfit to their location on the Clara Thorn farm. In Sheridan district, Calhoun County, the Hope Natural Gas Co. has started to drill on the G. W. Dye farm. In the same district, the same company has part of the rig material at a location on the E. E. Rothlisberger farm. In Sherman district, the Euclid Oil & Gas Co. has the rig completed for a second test on the M. A. C. Board farm.

Southeastern Oil

In Section 14, Jackson Township, Perry County, the Holiday Oil & Gas Co. completed No. 4 on the Samuel C. Paxton farm. The well produced, by swabbing, 20 bbls. the first 24 hours. In Coal Township, Perry County, the Ohio Fuel Supply Co. has a 10-bbl. pumper in the Clinton sand at No. 3 on the Charles Trimmer farm. In Section 25, same township, the Kachelmacher Estate has the rig completed for a second test on the Hemlock Coal Co.'s property. In Section 34, Falls Gore Township, Hocking County, the Griffin Producing Co.'s No. 12 on the Harry K. Starr farm is dry in the Berea grit. In the New Straightsville district, the Shaw Oil Co. had the same kind of luck at a test on the Jones Coal Co.'s property.

In Section 19, Green Township, Hocking County, the Hocking Valley Drilling Co. is due in the Clinton sand at No. 3 on the Dever Fling farm. In Section 3, Monroe Township, Holmes County, the Empire Gas & Fuel Co.'s test on the Newton Lowe farm is good for 15 or 20 bbls. a day in the Clinton sand. The same company is due in the sand at a test on the Carl A. Gordon farm and No. 3 on the E. E. Connor farm. In Lot 5, Madison Township, Licking County, W. W. and A. T. Wehrle are drilling for a Berea grit producer on the O. G. McClelland farm. In Lot 13, Hanover Township, the Carter Oil Co. is drilling a second Clinton sand test on the Zadre Connell farm.

In Section 23, Green Township, Harrison County, Frank W. Osburn and others have completed a test on the L. A. Moorhead farm and it is a light pumper in the Berea grit. In the southwest quarter of Section 19, Enoch Township, Noble County, A. S. Rucker and others have completed a test on the John N. Boyde farm good for less than 1 bbl. a day, in the Buell Run sand.

In Section 29, Lawrence Township, Washington County, Frank N. Rice & Co. have a 3-bbl. pumper in the second Cow Run sand at No. 4 on the Russell Ridgway farm. In Section 17, Washington Township, Monroe County, the Sylvan Oil & Gas Co.'s No. 8 on the J. A. Anderson farm is very light in the Keener sand. In Coshocton County, the Ohio Oil Co.'s No. 14 on the Fair farm is good for 10 bbls. a day. In Section 28, Richland Township, Fairfield County, the Kuger Oil & Gas Co.'s test on the William Kuger farm is good for 15 bbls. a day. The Ohio Fuel Supply Co. has a rig up on the J. G. Ruff farm.

In the Killbuck district, Lot 30, Hardy Township, Holmes County, the East Ohio Gas Co.'s No. 3 on the Hariett McCullough farm is drilled into the Clinton sand and showing for a 25 or 30-bbl. producer. In Section 18, same township, the Pure Oil Co. is drilling a test on the W. L. Close farm. In Section 17, Prairie Township, the Empire Gas & Fuel Co. is due in the Clinton sand at a test on the Byron Kendall farm and has started to drill a test on the William and E. Baker farm.

Light Gasser in Perry County

In the northwest quarter of Section 21, Madison Township, Perry County, the Atha Oil Co. drilled into the Clinton sand No. 12 on the Melick Brothers' farm. It is a light gasser, showing a little oil and has not been shot. After being given a shot of dope it may make a light pumper. In the northwest quarter of Section 19, Summit Township, Monroe County, Henry Weber and others have drilled their test on the Philip Neison farm into the Keener sand and showing for a 5-bbl. pumper. In Lot 175, Athens Township, Athens County, the Southern Oil Co.'s No. 4 on the D. M. Murphy farm is a small pumper in the Berea grit. In Section 18, Townsend has a duster in the same formation at a test on the George E. Tribe farm.

Coshocton Has Light Pumper

In the northeast quarter of Section 16, Pike Township, Coshocton County, the Pure Oil Co. has completed and shot in the Clinton sand No. 13 on the W. H. Ashcraft farm, not good for more than 100 bls. a day. W. W. & A. T. Wehrle have drilled a second test on the John Q. Hickman farm, in Section 4, Madison Township, Licking County, through the Berea grit and showing for a very light pumper. In the north central part of Lot 1,219, Sutton Township, Meigs County, the Pure Oil Co. has started to drill another test on the G. and Jennie Pavies farm.

In Lot 27, Monroe Township, Holmes County, the Empire Gas & Fuel Co. has completed in the Clinton sand a test on the Carl A. Gordon farm. It is a gasser good for 1,500,000 feet. Recently Holmes County has been coming to the front with more gassers than oil producers and is now the foremost gas producing county in southeast Ohio.

In the northeast quarter of Section 2, Harrison Township, Muskingum County, James W. Rusk has completed No. 9 on the O. H. Harrop farm good for 6 bbls. a day after shot.

Athens County

In the Fisher Pool, Section 33, Alexander Township, Athens County, the Ohio Oil Co. completed and shot in the Berea grit a test on the B. F. Parker farm. The well has a large dose of salt water and will probably be abandoned. In the same pool, Section 16, Alexander Township, J. A. Roshauson completed in the Berea grit No. 4 on the H. Wood farm. It is not good for more than 3 bbls. a day. In the northwest quarter of Section 21, Jackson Township, Knox County, Moore & Adams have a duster in the Berea grit at a test on the C. P. Davidson farm.

W. P. Beeson & Co. completed in the second Cow Run sand No. 7 on the J. H. Merrow farm. It is in Liberty Township, Washington County, and is a very light pumper. In Section 16, Richland Township, Fairfield County, Fred Sharpnack and others have started to drill a test on the J. G. Ruff farm. In Hopewell Township, Licking County, the Mid-East Oil Co. has started to drill a test on the W. D. Porter farm.

Good Gasser in Greene County

Near New Freeport, Springhill Township, Greene County, Pennsylvania, not far from the West Virginia line, the South Penn Oil Co. has drilled down to the fifth sand an old well on the Main farm. It was formerly an oil producer in an upper formation and the oil having been exhausted it was decided to drill it deeper. The result was very gratifying. At a few feet in the fifth sand a gas pressure was developed and it is estimated to be good for 14,000,000 feet a day. With the exception of one other well this is the largest completed in Green County since the first of the year.

In Greene Township, Greene County, Jesse L. Garard has drilled No. 5 on the Margaret J. Longanacker farm through the Dunkard sand and good for 3 bbls. a day. In Morris Township, the Manufacturers Light & Heat Co. has a gasser in the Gordon sand at a test on the J. W. Wrey farm. In Wayne Township, J. A. Phillips & Co. have a gasser in the Big Injun sand on the A. B. Strobridge farm.

In Perry Township, Greene County, the Carnegie Natural Gas Co.'s test on the H. and M. Wade farm is dry in the Bayard sand at a depth of 3,507 feet. In the same township, the South Penn Oil Co. plugged below the Big Injun sand its second test on the Ernest Hedlee farm and gave it a shot. It is good for 3 or 4 bbls. a day.

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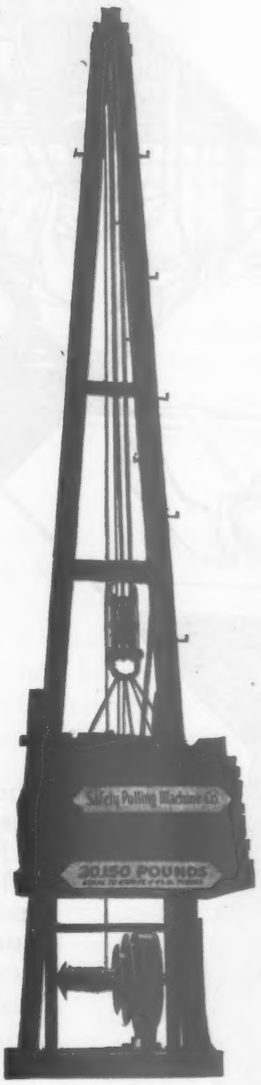

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DOMESTIC BURNER DEVELOPMENT MEANS MUCH TO OIL INDUSTRY

By N. O. Fanning

NEW YORK, Dec. 14.—What does the development of the domestic oil burner mean to the petroleum industry?

The use of domestic oil burning equipment for homes and industrial plants, for power and heating, is definitely launched on a large scale, and its growth is considered only a matter of time. The satisfactory development of this industry is dependent only upon the improvements in equipment manufactured and assurance of a continued ample supply of oil at a reasonable price.

Oil burners now in use require from 1,500 to 150,000 gallons of oil annually each. The oil used is a fuel oil ranging from 14 gravity to 40 gravity, depending upon the type of burner. The current prices of oil used in demestic burning equipment range from 5 to 10 cents per gallon, plus delivery cost for long distances.

The development of oil burning was slow until 1924, when the definite approval of the use of home and industrial burners was given by the major oil companies, based upon their belief that the supply of petroleum would be ample, and also on their opinion that burners had been developed to a degree of efficiency justifying the encouragement of their use.

Increase in Numbers

One of the major oil burner manufacturers sold 1,909 burners in 1923, 7,038 in 1924 and in the first 10 months of 1925, 10,502 burners. Sales for the entire year are estimated at 12,000. These figures are more or less representative of the hold oil burning has taken on the general public. Based on the same figures, the use of oil in burning equipment has increased 10 times or more since 1923, and the industry is only in its infancy.

Oil burner manufacturers have estimated the potential market for burners at enormous figures, but a check of their estimates with those of some of the large oil companies, whose business it is to supply the fuel for them, indicates a touch of overoptimism.

The potential market for oil burners falls into two classes, first the small burners for domestic home use, and second the larger burners for heating apartments, stores, and to supply power and heat for industrial plants.

One of the leading manufacturers of burners for home use estimates that there are approximately 13,000,000 homes in which oil burners might be used to advantage. His statement says: "On January 1, 1925, there were estimated to be 13,250,000 homes in the United States wired for electricity. Every such wired home is a prospect for an oil burner." He names one good-sized city in the Middle West in which one out of every 10 homes has an oil burner.

Another leading manufacturer of burners, specializing in the larger type burners, estimates the market for burners at one to every 1,000 inhabitants in the industrial cities of the East, Middle West and the Pacific Coast.

If domestic oil burners were installed in one of every 100 homes, that would make 132,500 burners in use in the United States, of the smaller type. Taking the estimate for the larger burners as applying to the entire population, the potential market would amount to about 110,000 burners of that type.

Potential Burner Market

These estimates are believed to be conservative, and give a total potential market for 242,500 oil burners in the United States.

To arrive at an estimate of the amount of oil required to operate these visual 242,500—say 250,000, to use the round numbers—oil burners is extremely difficult because of the wide range of consumption of the various types of burners, and circumstances surrounding their use.

The small domestic home oil burner is said to require about 1,500 gallons of oil a year.

The larger oil burners use from 15,000 to 150,000 gallons of oil annually.

If approximately 140,000 home burners were in use and consumed 1,500 gallons each a year, the total annual consumption would amount to 210,000,000 gallons.

The larger burners, using an average, say, of 50,000 gallons a year each, would consume an aggregate of 5,500,000,000 gallons annually.

All oil burners of the stationary, land installation type would therefore be estimated to consume about 5,710,000,000 gallons of oil a year.

Oil company representatives who have studied the possibilities of the oil burner believe that this figure will be reached within five years.

Supplying the Oil

The major oil companies have definitely put their stamp of approval on oil burning, even to the extent of developing and selling oil burners of their own make, and have therefore calculated the need of being ready to supply this additional quantity of oil, which will represent an entirely new source of consumption.

An annual consumption of 5,710,000,000 gallons would make the oil burner a major consumer of oil products, along with the automobile. It would mean an additional consumption of approximately 135,000,000 bbls. of oil a year, or about 370,000 bbls. daily.

Taking into account a gain in consumption of these proportions, together with a natural increase in gasoline consumption, consumption of fuel oil in Diesel engines, consumption of lubricants, and so on, makes the problem of assuring an ample supply of crude oil seem of greater importance than that of providing additional storage for the current overproduction.

The major step which oil companies are taking to prepare for the expected growth in consumption is that of developing new oil fields—entirely new sources of supply.

It is a matter of note among oil men that the number of new big flush oil fields being opened up in the United States is decreasing. Production of the country is not doing much more than holding its own.

Aside from the fact there appears to be a large supply of oil in storage, the supply does not seem to be in an exceptionally strong position. Naturally, oil men have anticipated a falling off in production in the United States, with a consequent draft upon stocks of crude, and have been developing new sources abroad.

Need Assured Supply

The normal development of oil burning depends intrinsically upon an adequate supply of fuel at reasonable cost, and so it is the policy of the oil business to be well supplied, rather than to be caught short, in so far as it is able.

Oil burner users require assurance of from one to five years' supply of oil. The larger users require the longer assurance, and contracts for five years' supply have frequently been given. These long-term contracts are naturally for large quantities, running above 500,000 gallons.

An appreciation of the problem of supplying users of oil burners at reasonable prices presents an entirely different aspect on the petroleum situation than that indicated by those criticising the oil business for overproducing.

Leading oil men have stressed the necessity of a supply of oil ample to meet all growing requirements without an abnormal increase in prices, and to assure this is undeniably the major problem. It means a larger volume of business with, perhaps, a smaller margin of profit per barrel. But how many are looking for a shortage of oil, with runaway prices and larger profits per barrel?

MEXICAN FIELDS

(Continued from Page 42)

lows: Corona Petroleum Co.'s No. 106 Piedras cemented 8-inch in gray lime at 1,310 feet; No. 108 is drilling in shale at 180 feet, and No. 102 Delicias is in a similar formation at 1,060 feet. Credito Petrolero's No. 3 Piedras is in shale at 800 feet; its No. 5 is in the same formation at 1,300 feet. East Coast Oil Co.'s No. 47 Laguna de la Milpa cemented 8-inch in lime shells at 1,380 feet, and two tests in the Ingenio are rigging. Ita Mex Oil Co.'s No. 16 Tampuche is in shale at 310 feet; Intermex Oil Co.'s Nos. 2 and 3 Tampuche are in gray shale around 600 and 1,200 feet, respectively. International Petroleum Co.'s No. 22 Tanchicuin is in gray lime at 1,930 feet, and its No. 23 is in a sand at 100 feet. Mexican Sinclair Petroleum Corp.'s No. 5, Lot 1, Camolote, is in gray lime at 1,790 feet; No. 6, same, cemented 10-inch in the San Felipe at 1,290 feet; its No. 13 Guitierrez cemented 8-inch in gray lime at 1,425 feet; three tests are rigging in the old Panuco and material is being moved for a fourth. Mexican Gulf Oil Co.'s No. 9 Zuniga cemented 8-inch in gray lime at 1,570 feet and its No. 15 Lopez is in shale at 400 feet; No. 3 Flores is working on rig at 1,700 feet, and derrick is up for No. 5. National Oil Co.'s No. 14 Chijoles is in gray lime at 1,700 feet; No. 19 is in broken lime at 2,040 feet; No. 39 is testing cemented 8-inch at 1,458 feet. Tampascos Oil Co.'s No. 11 Robles is in gray lime at 1,610 feet, and its No. 12 in lime and shale at 1,808 feet. Transcontinental Petroleum Co.'s No. 5 Piedras is in gray lime at 1,615 feet, and its No. 7, Lot 4 Tanchicuin, is in gray shale at 330 feet. Williamson and others' No. 1 Guzman (E. M.) cemented 8-incli in gray lime at 1,550 feet.

Cacalilao

In the Cacalilao sector of the Northern Fields: La Corona Petroleum Co.'s No. 175, Lot 4, is in shale at 500 feet. International Petroleum Co.'s operations in Lot 5: No. 236 is at 1,900 feet, shut down for orders; No. 239 is in white lime at 2,338 feet; No. 240 is in gray lime at 1,445 feet; No. 245 is in blue shale at 305 feet; No. 246 is in gray lime at 1,940 feet; No. 251 is in gray lime at 1,888 feet; No. 252 is in gray shale and shells at 1,030 feet; No. 254 is in gray shale at 560 feet; No. 255 is in the San Felipe at 1,300 feet; No. 256 is in blue shale at 800 feet; No. 258 is in the same formation at 305 feet; No. 259 is in pink shale at 301 feet, and derricks are up over two more locations. Mexican Petroleum Co.'s No. 20, Lot 1 Cacalilao, is in gray lime at 1,855 feet. Transcontinental Petroleum Co.'s operations in Lot 4: No. 153 is in shale at 150 feet; No. 206 cemented 10-inch at 600 feet; No. 232 is in lime at 1,945 feet; No. 234 cemented 8-inch in the San Felipe at 1,200 feet; No. 237 is in gray shale at 500 feet, and one test is rigging. Up in the Paciencia, just above Cacalilao, Transcontinental's No. 9 is shut down for orders in the San Felipe at 1,565 feet; its No. 47 is running 8-inch in the San Felipe at 1,220 feet; its No. 55 is in lime at 2,005 feet.

South Fields

In the South Fields the following obtains: Huesteca Petroleum Co.'s No. 30-A Cerro Azul is in brown shale at 1,230 feet and No. 70 is in basalt at 1,610 feet. Down in Tierra Blanca, Huasteca's No. 48 is in brown shale at 300 feet; No. 54 is in the same formation at 730 feet and No. 57 is in gray shale at 1,610 feet. Up in Chinampa, Huasteca's No. 15 Casiano is in shells and gumbo at 1,225 feet. International Petroleum Co.'s No. 32 Toteco cemented 10-inch in shells at 1,710 feet, and below the Tuxpam River, its No. 7 Agua Nacida is in hard sandy shale at 3,926 feet. Mexican Sinclair Petroleum Corp.'s No. 15, Lot 226 Amatlan, is running 8-inch in a lime at 2,025 feet. Mexican Eagle Oil Co.'s No. 46 Amatlan is in sandy shale at 2,183 feet, and its No. 1, Lot 2 Escobal, north of Furbero, is in shale and shells at 2,903 feet. Penn Mex Fuel Co.'s No. 3 La Lita is getting to be a deep hole at 3,056 feet in lime shells. Transcontinental Petroleum Co.'s No. 1, Lot 16 Zacamixtle is in gray lime at 2,185 feet and its No. 7, Lot 17, is in hard gray shale at 2,080 feet.

Northern Miscellaneous

In the Ebano Pool, in the Northern Fields, Mexican Petroleum Co.'s operations in its Chapacao are as follows: No. 41 is in gray lime at 1,253 feet; No. 44 is in the same formation at 1,635 feet; No. 47 is in gray lime at 1,430 feet. In its Chijol No. 35 is in white lime at 2,015 feet; No. 37 is in gray lime at 1,590 feet; No. 40 is in gray and white lime at 2,270 feet; No. 41 is in gray shale and shells at 1,110 feet. In La Raya, its No. 1 is in blue shale at 690 feet; its No. 11 La Pez is in gray shale at 250 feet; its No. 2 Midway is in blue shale at 645 feet.

In Los Esteros, American International Fuel Co.'s No. 20 is in white and gray lime at 1,838 feet; No. 21 is spudding; No. 24 is in brown lime at 1,355 feet.

In the Marland Field, Cia. Pet. Franco Espanola's No. 26 Limon is running 10-inch in gray lime at 1,010 feet; No. 37 is in the same formation at 1,390 feet; Nos. 40 and 41 have each cemented 8-inch in gray lime at 1,408 and 1,445 feet, respecitvely.

In the Topila district, Ita Mex Oil Co.'s No. 20 La Mula is in hard gray shale at 1,540 feet.

In the Chapacao-Corcovado, Mexican Gulf Oil Co.'s No. 21-A is in gray lime at 2,305 feet; No. 23 is in white lime at 2,150 feet and No. 28 is rigging. In the Chapacao right of way, National Lines' No. 25 cemented 8-inch in gray lime at 1,262 feet, and in Corcovado proper, Lot 6, Transcontinental Petroleum Co. is spudding No. 24.

Terminal Purchase

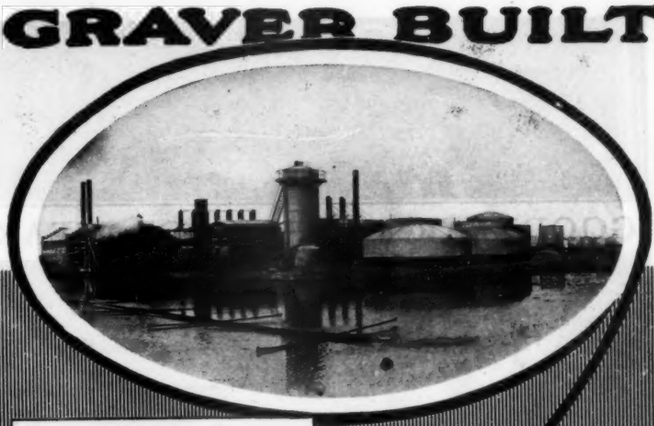
National Oil Co. has concluded a memorandum of agreement to sell its ocean-loading terminal at Tampico to the National Lines. As reported in this correspondence before, National Lines, with more production on its Chapacao right of way, in the Ebano district, than it could handle at first concluded a rental agreement with National Oil Co. and laid a switch track into it to discharge tank cars. It sought storage and an outlet for sales of surplus, as, primarily, the National Lines was supposed to produce oil for its own fuel needs, the largest individual fuel need in Mexico, it is said. The terminal is equipped to load ocean-going tankers; and has, at present, three 55,000-bbl. steel tanks. In this connection, National Lines has sold oil to Pierce Oil Corp., La Espuela Oil Co. (the latter is a fuel producer for the Freeport Sulphur Co. at Freeport, Tex.), and, just now, to Mexican Gulf Oil Co. (Gulf Coast Corp.-Mellon interests.) The first two are taking deliveries at the terminal in question. Mexican Gulf Oil Co. will accept deliveries as soon as a (about) three kilimeter 8-inch line is laid from National Lines' wells at Mendez station to the Gulf's Chapacao-Corcovado pipe line (8-inch) which runs to the Gulf's own big ocean-loading terminal at Tampico. This short lateral should be finished in a few days and deliveries to the Gulf should commence at once. Just south of Mendez station is the Paciencia of the Penn Mex Fuel Co., which is being drilled and exploited for its account by Transcontinental Petroleum Co. (Standard Oil of New Jersey.) From there the drilling operations through the Chapacao right of way lead into Mexican Petroleum Co.'s property, which bounds it at Mendez station on the north. Just what Pierce Oil deliveries call for is not exactly known; Mexican Gulf calls for, according to officials of the company, "an undefined quantity of oil for an undefined period." La Espuela reports the same terms. The purchase price was not made public.

Property Acquired

East Coast Oil Co. (Southern Pacific) has concluded negotiations with the owners of Tamesi Asphalt & Petroleum Co. to drill its tract of some 4,000 and more acres of land situated in the State of

(Continued on Page 82)

GRAVER BUILT



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FURTHER TRIUMPH FOR DIESELS DEMONSTRATED BY "GRIPSHOLM"

By N. O. Fanning

NEW YORK, Dec. 14.—Of the new uses for petroleum which are now rapidly developing, the two most important probably are as fuel for oil burners and as fuel for Diesel engines. The strides made in the perfection of Diesel engines, burning fuel oil, as compared to the internal combustion engine, burning gasoline, are exemplified in the arrival at New York of the first large transatlantic passenger liner propelled by Diesel engines, the Swedish-American liner Gripsholm.

Just as the use of gasoline was dependent upon the development of a successful internal combustion engine, the use of Diesel oil is dependent upon the development of a suitable Diesel engine for various purposes. Diesel engines have been developed for marine use, for railway locomotives, and so on, and will in time be used wherever propulsion is necessary. It is even claimed that automobiles will in time be propelled by engines burning a low grade of oil—Diesel oil, averaging 25 to 35 gravity—instead of gasoline, averaging 56 gravity and up.

The ultimate perfection of Diesel engines opens up a major field for the oil marketing organization, a field which may equal, if not surpass, gasoline in volume of consumption.

The use of Diesel engines in the Gripsholm represents an important phase of development, inasmuch as it is not until the last few years Diesel engines have been built of suitable proportions to fit in the average ocean-going vessel, where the requirements of space, weight, and so on, are especially rigid.

A representative of the engineers who built the Diesel engines for the Gripsholm states that fully 50 per cent of the tonnage now being built for Europe, including all classes of vessels, are motor ships, propelled by Diesel engines.

It is interesting to note that the development of the Diesel-propelled ship conflicts to some extent with that of steam-driven vessels using bunker fuel oil instead of coal. It probably means that future tonnage to an increasing extent will not be steam driven, and that therefore the use of bunker fuel oil will not grow as fast as that of Diesel oil. The present difference is that bunker fuel oil averages 15 gravity or so, while Diesel oil is lighter, ranging from 25 to 35 gravity.

However, the direction in which engineers are working is toward the perfection of Diesel engines using a much lower gravity oil. Already there has been substantial progress in this connection.

Description of Gripsholm

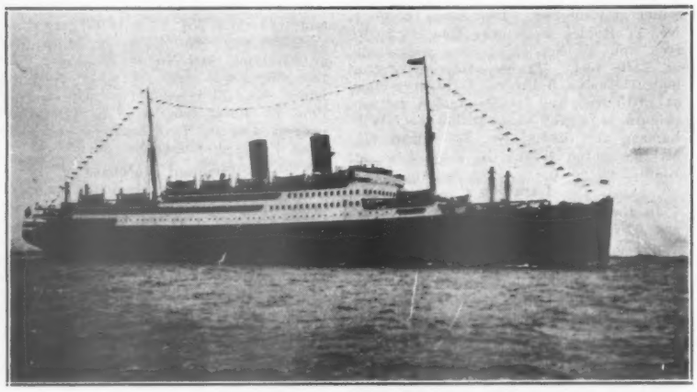
The passenger liner Gripsholm is a typical transatlantic liner, built along graceful lines and having the appearance of the latest and finest type of ocean liner. The vessel has accommodations for 232 first class, 382 second cabin and 1,002 third cabin, or tourist class, passengers. Her principal dimensions are:

Length over all	575 ft.
Extreme breadth	74 ft. 3 in.
Depth	76 ft. 6 in.
Draft, loaded	29 ft.
Gross tonnage	17,300 tons
Displacement, loaded	32,600 tons
Deadweight tonnage	10,000 tons
Fuel capacity	2,450 tons

She has about 284,000 cubic feet of cargo space, 13,200 cubic feet of insulated cargo, 11,000 cubic feet for refrigerated ship's stores, 16,000 cubic feet of ordinary store room space and 10,000 cubic feet for mail and baggage.

The vessel has a straight raked stem and an elliptical stern and is fitted with two funnels and two pole masts. A cellular double-bottom extends the whole length of the vessel between the peak bulkheads, the various compartments therein being utilized for the carriage of oil fuel, lubricating oil, feed water and water ballast.

The Gripsholm is flagship of the Swedish-American Line, the first Diesel-driven vessel to engage in the transatlantic passenger service and the largest vessel that has ever carried the Swedish flag. She was built in the Armstrong Whitworth yard at Newcastle-on-Tyne, under the personal supervision of Director Filip Lindahl of the Brostroms Lines Agency and of Sir John Biles & Co., naval architects for the owners.



The Swedish-American motorship "Gripsholm."

The Diesel Engines

The main engines of the Gripsholm consist of two double-acting, six-cylinder, Burmeister and Wain Diesel units, of new design and the largest ever built. Each is directly coupled to the propeller shaft. The combined power of the two units is 22,000 horsepower and the average speed is 17 knots. Auxiliaries are electrically driven, the power being generated by three smaller Diesels of 650 horsepower each and three of 950 horsepower each, the former driving the dynamos and the latter producing compressed air for starting the main engines. The vessel has two dummy smokestacks. The forward one is used as a passenger elevator shaft and the other for elevators for the crew and for ventilation and exhaust pipes. Electricity is used for lighting, heating and cooking.

The Diesel engines are the two largest ever built for any purpose. Their fuel is oil forced into the cylinders by means of compressed air at 65 atmospheres pressure and then exploded very much as gasoline is exploded internally in an automobile. At 125 revolutions a minute these two engines, each driving a propeller to which it is directly geared, are capable of developing 17,000 horsepower, and at the trial runs of the boat, just held in the North Sea, prior to the departure from Gothenburg, Sweden, to New York on the maiden trip, the average speed attained was 17¾ knots, which means that the direct trip from Sweden to New York and vice versa will be made in less than eight days, as

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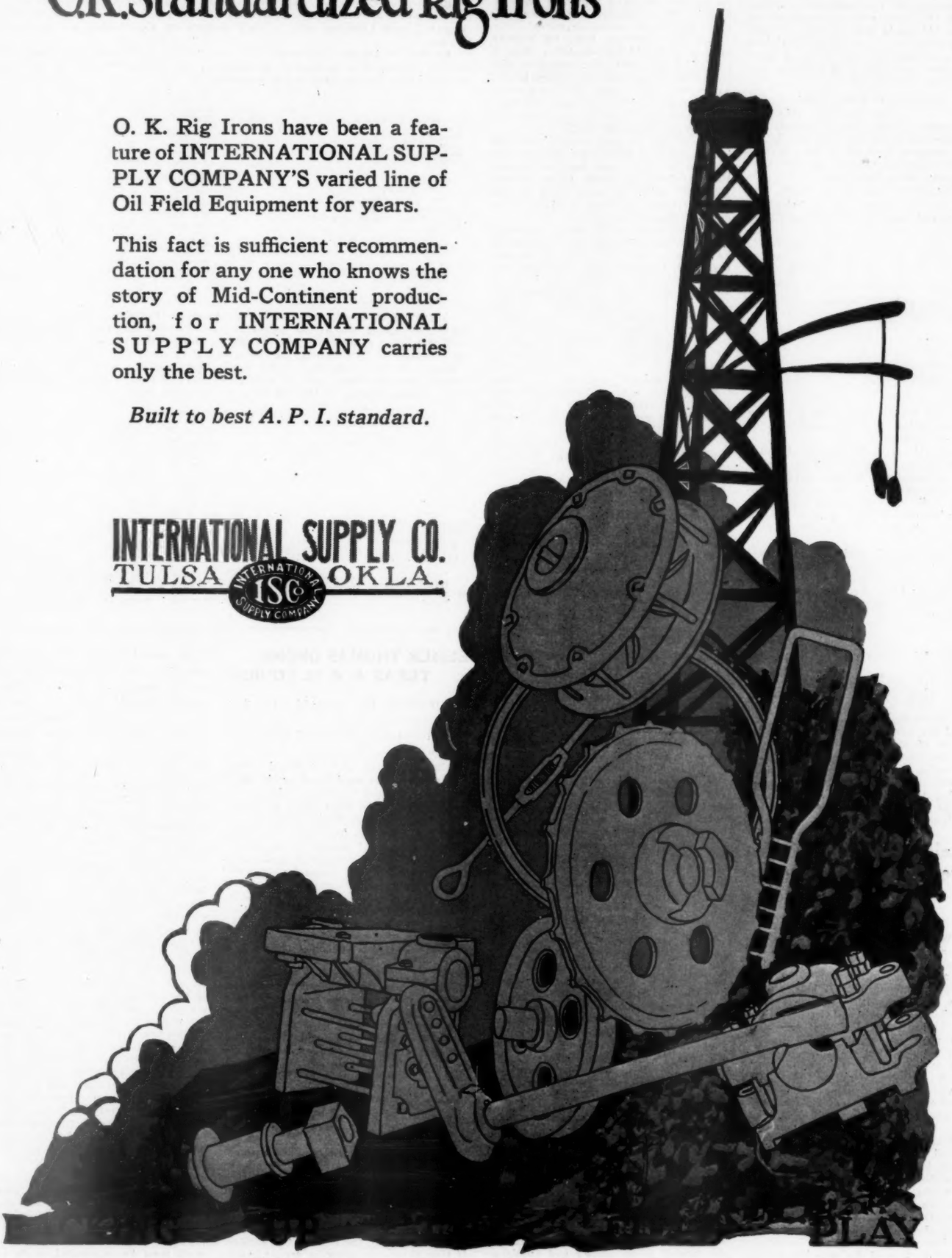


compared with the customary nine or ten.

Hitherto motor ships have usually been freighters, moving slowly, but capable of half circling the globe and returning without refueling, but now they have also entered the fast passenger service. Of all the new vessels completed at Swedish shipyards last year 80 per cent were motor-driven, according to United States commerce reports, while of these now under construction 85 per cent are to have the new power.

Growth of Motor Ships

In Great Britain the motor ship tonnage under construction increased last year from 22 to 35 per cent and in all other countries from 35 to 54 per cent, so that roughly, half of all the new ships now being built, are to be propelled by motors instead of steam.

The world's largest motor freighters, the Svealand and Amerikaland, of 22,000 tons each, have been launched during the present year at the Deutsche Werft of Hamburg, for the Brostrom Line, of Sweden, and are now in commission for the United States Steel Corp., carrying ore from Chile to the Sparrow's Point yards at Baltimore.

A comparison of the growth of motor ships and steam vessels burning bunker oil is interesting. It shows that the motor ship is only in its infancy, comparing with the oil-burning vessel in 1914, when only 441 oil burners were in existence. At June 30, 1925, there were 608 motor ships.

The numbers of world steam vessels burning oil and Diesel-propelled ships, with their gross tonnage, by years, follows (figures from the Bureau of Navigation, United States Department of Commerce):

	Steam Vessels (Burning Oil) No.	Steam Vessels (Burning Oil) Gross Ton.	Motor Ships No.	Motor Ships Gross Ton.
June 30, 1925	3,214	17,215,342	608	2,157,273
June 30, 1924	3,086	16,470,302	500	1,586,924
June 30, 1923	2,917	15,229,946	431	1,248,158
June 30, 1922	2,694	13,838,178	416	1,166,370
June 30, 1921	2,474	12,415,181	374	959,471
June 30, 1920	1,731	8,345,913	290	693,334
June 30, 1914	441	1,527,728	60	194,019

The above figures apply to world tonnage of 500 gross tons or over, and are exclusive of army, navy, admiralty and other Government oil burners.

According to Lloyds Register, on June 30, 1925, there were 23,570 vessels, aggregating 41,862,181 gross tons, burning coal, as against 5,635, of 20,518,195 gross tons, burning oil.

Receipts From Gulf Greater, Imports Less, At Atlantic Ports

By N. O. Fanning

NEW YORK, Dec. 12.—Receipts of crude and refined petroleum by water at Atlantic Coast ports during November, 1925, are estimated at 11,804,000 bbls., a daily average of 393,000 bbls. These figures compare with 11,949,000 bbls., and 385,000 bbls. daily, in October, which was a 31-day month.

The most important change in November as compared with the preceding month was a gain in receipts from the Houston district amounting to 323,000 bbls., and a decline in imports from countries other than Mexico of 286,000 bbls., these changes about offsetting one another.

The movement of oil to the Atlantic Seaboard from California during November was far below expectations. It had been expected approximately 2,000,000 bbls. would be shipped, but the actual figures were 1,137,000 bbls., according to The Oil and Gas Journal estimate. In fact the daily average movement in November, 36,000 bbls., was identically the same as that of the preceding month.

Indications now are that the California movement eastward will not show any material increase unless circumstances change, the circumstances being the absorption of California oil in other markets. The demand for fuel oil has been so great so far this season, the stocks now on hand represent only assurance of an adequate supply, and not a menace to the price structure.

November receipts from all sources, amounting to 11,804,000 bbls., show a decline of 2,616,000 bbls., compared with November of last year, when they totaled 14,420,000 bbls. Daily average receipts last November of 480,000 bbls., represent an increase of 87,000 bbls. over the daily average for November, 1925.

The decline in total receipts this year is accounted for by smaller receipts from the Pacific Coast and smaller imports. Receipts from the Pacific Coast declined 1,260,000 bbls., or more than 50 per cent. Imports declined 1,861,000 bbls., or more than 40 per cent.

The following table shows estimated total receipts of crude and refined oil by water at Atlantic ports for November, 1924, October, 1925, and November, 1924. (Figures in barrels):

	Nov., 1925	Oct., 1925	Nov., 1924
Baton Rouge and New Orleans	1,818,000	1,908,000	1,432,000
Port Arthur, Sabine, Beaumont	3,120,000	3,238,000	3,198,000
Houston, Texas City, Galveston	2,930,000	2,607,000	2,853,000
Gulf Coast	7,868,000	7,753,000	7,483,000
Pacific Coast	1,137,000	1,099,000	2,397,000
Imports from Mexico	2,422,000	2,434,000	4,283,000
Other imports	377,000	663,000	257,000
Total	11,804,000	11,949,000	14,420,000

Smaller receipts of oil during November, this year, than in the same month of last year contrasts with the increase in consumption of oil. It is taken as an indication that refinery and jobbing stocks of oil on the Atlantic Seaboard must be getting low.

NEW OIL FILM

"Through Oil Lands of Europe and Africa" is the title of a new educational motion picture film just completed by one of the larger petroleum companies for inclusion in the library of industrial films distributed by the Bureau of Mines. The first part of the film deals with the oil industries of Germany, France, Spain, Morocco and Algeria; the second with the fields of Italy, Hungary, the Danube and Rumania and the third the Polish and Egyptian fields. In addition to depicting the operations in the petroleum industry in the countries named, many interesting scenes portraying life and customs of the various picturesque regions are shown. The Bureau of Mines, Pittsburgh, Pa., is distributing copies of the film for exhibition by civic bodies and other organizations.

ASPHALT IN BATAVIA

A Batavia journal describes the exploitation of the natural asphalt deposits on the Island of Boeton, south of southeast Celebes, between the sea of Booeror and Flores. The analysis of this asphalt by the Technical University at Bandoeng was favorable, the composition showing 42 per cent bitumen and 58 per cent mineral matter, which closely approaches the analysis of Trinidad asphalt. At the end of 1924, the local Government concluded a contract for exploitation of the deposit, the Government to receive three florins for each ton of asphalt obtained. The raw product is shipped to Batavia for treatment, but it is understood the company intends to transfer the heating and mixing apparatus to Boeton.

RESIGNS FROM TIDAL

W. K. Cottrell of Tulsa, comptroller for the Tidal Companies, has resigned after a five-year service with the Tidal organization and will go into business for himself as an auditor and public accountant in Tulsa. His successor has not yet been appointed.

RECEIPTS OF CALIFORNIA OILS AND NOVEMBER PETROLEUM IMPORTS

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the month of November totaled 1,817,000 bbls., a daily average of 60,566 bbls., compared with 1,396,000 bbls., a daily average of 45,032 bbls. for the month of October.

Receipts at Atlantic and Gulf Coast ports for the week ended December 5 totaled 330,000 bbls., a daily average of 47,143 bbls., against 314,000 bbls., a daily average of 44,857 bbls. for the week ended November 28.

	Total Month of November	Total Month of October	Week Ended Dec. 5	Week Ended Nov. 28
At Atlantic Coast Ports—				
Baltimore	218,000	95,000	105,000	75,000
Boston	292,000	132,000	.....	80,000
New York	442,000	635,000	77,000	.....
Philadelphia	400,000	304,000	.....	159,000
Others	284,000	*160,000	.....	.....
Total	1,636,000	1,326,000	182,000	314,000
Daily average	54,533	42,774	26,000	44,857
At Gulf Coast Ports—				
New Orleans and Baton Rouge	.....	*70,000	75,000	.....
Port Arthur and Sabine District	156,000	.....	73,000	.....
Tampa	25,000	.....	.....	.....
Total	181,000	70,000	148,000	.....
Daily average	6,033	2,258	21,143	.....
Total Atlantic and Gulf Coast ports	1,817,000	1,396,000	330,000	314,000
Daily average	60,566	45,032	47,143	44,857

*Revised.

According to figures collected by the American Petroleum Institute, imports of crude and refined oils at the principal ports for the month of November, totaled 5,107,000 bbls., a daily average of 170,233 bbls., compared with 5,057,000 bbls., a daily average of 163,129 bbls. for the month of October.

Imports at the principal United States ports for the week ended December 5 totaled 1,091,000 bbls., a daily average of 155,857 bbls., compared with 1,139,000 bbls., a daily average of 162,714 bbls. for the week ended November 28.

(Barrels of 42 Gallons)

	Total Month of November	Total Month of October	Week Ended Dec. 5	Week Ended Nov. 28
At Atlantic Coast Ports—				
Baltimore	587,000	663,000	.....	152,000
Boston	130,000	420,000	137,000	65,000
New York	1,419,000	1,222,000	123,000	226,000
Philadelphia	304,000	195,000	40,000	65,000
Others	1,036,000	712,000	400,000	158,000
Total	3,476,000	3,212,000	700,000	666,000
Daily average	115,867	103,613	100,000	95,143
At Gulf Coast Ports—				
Galveston District	391,000	775,000	.....	126,000
New Orleans and Baton Rouge	821,000	920,000	343,000	113,000
Port Arthur and Sabine District	233,000	60,000	.....	189,000
Tampa	186,000	90,000	48,000	45,000
Total	1,631,000	1,845,000	391,000	473,000
Daily average	54,366	59,516	55,857	67,571
At All United States Ports—				
Total	5,107,000	5,057,000	1,091,000	1,139,000
Daily average	170,233	163,129	155,857	162,714

ELMER THOMAS OPENS TEXAS A. & M. COURSE

HOUSTON, Tex., Dec. 14.—The first of the lectureship series at the Texas Agricultural and Mechanical College at College Station, Tex., was delivered by J. Elmer Thomas, of Fort Worth. The lectureships were established by the Mid-Continent Oil and Gas Association in cooperation with the Department of Chemistry and Chemical Engineering.

Mr. Thomas touched upon the three separate phases of geology in connection with petroleum development work—surface, subsurface and technological. He spoke in part as follows:

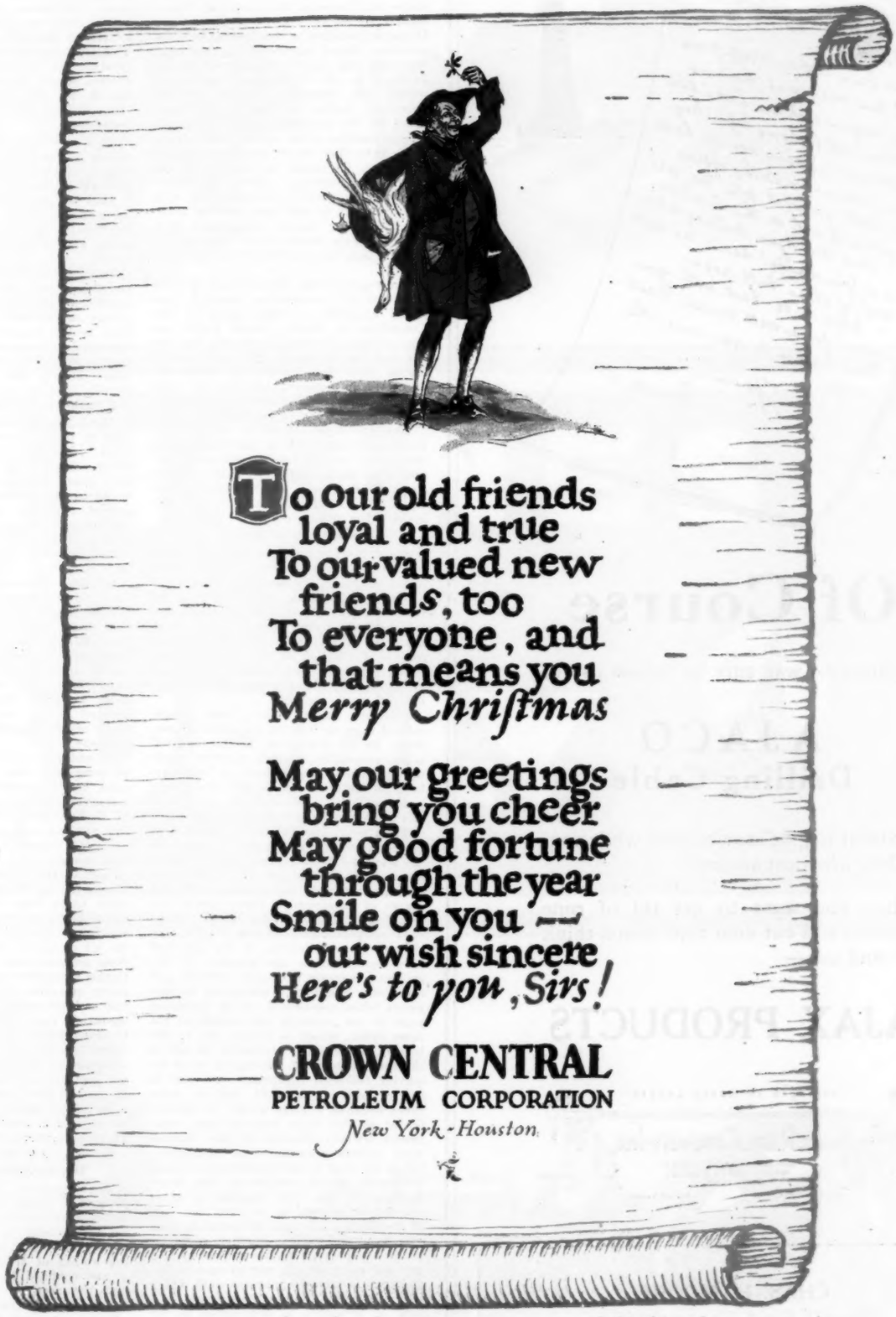
"Oil is a complex series of hydrocarbons caused by the partial decomposition of plant or animal matter, or both, taking place under water, thus avoiding oxidation," said Mr. Thomas. "There are four requisites for a commercial oil deposit: (1) An organic shale or lime to supply a source for the oil; (2) a porous rock to furnish a reservoir for the oil; (3) an impervious cap or special structure to form a trap for the oil, and (4) some cause, still imperfectly understood, for the accumulation of the oil in this reservoir trap. All four favorable factors cannot always be detected by geologists. There is no magic in petroleum geology. All we can do is to say that any given area and any particular location is more favorable or less so than another.

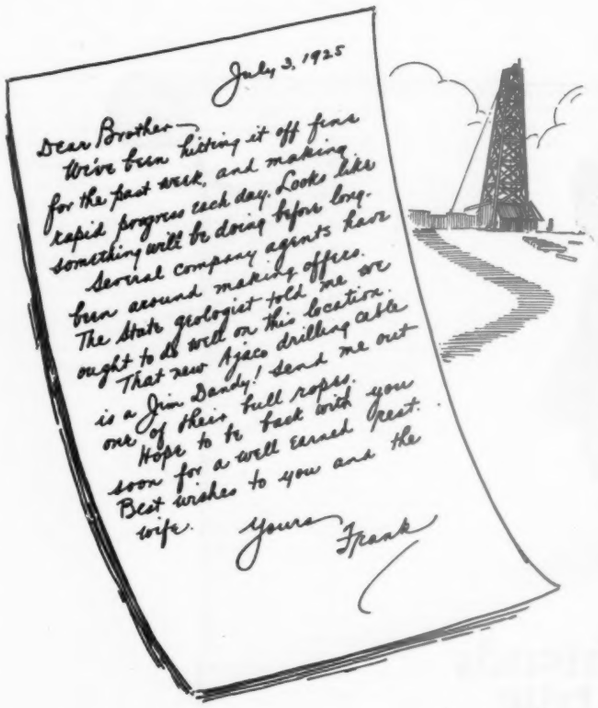
"Surface studies are designed primarily to locate the initial test, the discovery well in a new district. As to whether or not the area involved is underlain by the type of rock beds favorable to the origin, accumulation and retention of oil we may examine the formations to be penetrated by the drill at the surface, if they outcrop in adjacent areas; if not, their character must be determined from the records of wells drilled previously.

"A second division in petroleum geology has to do with subsurface or underground mapping of structure. The same method applies except that instead of some outcropping bed being selected as a datum plane, a buried horizon, is chosen; either a readily recognizable limestone, a definite water sand, a coal bed or other distinctive formation is used. The engineering involved is similar; the elevation of a number of points on the datum is determined and a contour map is then drawn to depict the structure of that horizon. This method is particularly useful in areas where there are no surface outcrops. A good example of this condition is the Reagan County district. While subsurface studies are often important in the location of new fields, their principal function is in the development of producing areas.

"Technological work really embraces physics and mechanical engineering, but it is coming to be done more and more by men with geological training because of the advantages of a clear understanding of the geology involved while applying principles of physics and mechanical engineering. The problems involved intimately concern the prompt and economical extraction of the oil; increasing the amount recovered by the natural forces, water pressure and gas pressure, by artifical methods—pumping, applying vacuum or air pressure, flooding by water, and also decreasing the percentage of oil contests necessarily left in the ground. The function of technological work is to improve operating methods.

"I would emphasize that each class of work must be commercial and profitable. The work of geologists in locating new fields, in drilling up productive areas and involving operating problems must pay a profit or they will not be employed. The work must be economical, rapid and accurate within permissible limits," Mr. Thomas said in conclusion.


To our old friends
loyal and true
To our valued new
friends, too
To everyone, and
that means you
Merry Christmas
May our greetings
bring you cheer
May good fortune
through the year
Smile on you —
our wish sincere
Here's to you, Sirs!
CROWN CENTRAL
PETROLEUM CORPORATION
New York - Houston


July 3, 1925
Dear Brother—
We've been hitting it off fine for the past week, and making rapid progress each day. Looks like something will be doing before long. Several company agents have been around making offers. The State geologist told me we ought to be well on this location. That new 1920 drilling cable is a Jim Dandy! Send me out one of their full ropes. Hope to be back with you soon for a well earned rest. Best wishes to you and the wife.
Yours
Frank

Of Course

satisfaction was sure to follow use of

AJACO
Drilling Cable

It's built to give service even when conditions are most severe.

When you want to get rid of rope troubles and cut your rope costs, think of—and use—

AJAX PRODUCTS

CHAS. H. MOORE
Special Field Representative
Okmulgee, Okla.

A. S. M. E. MEETING APPROVES COMMITTEE OF ELEVEN REPORT

By L. M. Fanning

Declaring that the report of the Committee of Eleven of the American Petroleum Institute on Petroleum Supply and Demand submitted to the Federal Oil Conservation Board stands out as the most thorough and painstaking survey of the industry, in all its branches, made from within, the Petroleum Division of the American Society of Mechanical Engineers on the occasion of the forty-sixth annual meeting of the society held in New York gave this report prominent attention in its paper on progress in petroleum engineering. Other authorities were widely quoted in connection with improvements in field and refining methods, including many quotations from writers whose works have appeared in The Oil and Gas Journal during the past year.

The report of the division also stressed the need for cooperative research, and called attention to that phase of the Committee of Eleven report which has also received editorial treatment by The Oil and Gas Journal. Not only was it stated that there should be wider cooperation in research between oil companies, but better cooperation between manufacturers of equipment and its users.

The executive committee of the Petroleum Division, whose chairman signed the report on progress in petroleum engineering, comprises W. R. Eckart, chairman; H. R. Pierce, vice chairman; Carl F. Braum, T. H. Kerr and Walter Samans. The report follows in part:

Substance of Report

Since the beginning of the petroleum industry in this country, dating back about 66 years, its progress, from force of circumstances, has been largely of an empirical character. Drilling and pumping methods were adapted from those used for water, as were the methods for the distillation of petroleum adapted from those previously developed for the production of illuminating and lubricating oils from coal.

Scientific progress has been handicapped more or less for a number of reasons. In the first place, petroleum itself is an extremely complex mixture, made up of various proportions of hydrocarbons of different series and containing some impurities, so that the petroleum oils to be handled are seldom of the same composition. The physical properties of these mixtures, upon which so much of the scientific work depends, vary in magnitude with the nature of the mixture and are therefore not known with any degree of exactness, without special determination in each case. Again, where such complex mixtures have to be considered, the application of the physical laws concerned to the solution of the problems becomes extremely difficult and involved. Small-scale laboratory experiments when reproduced on an operating scale do not generally give results of the same order, which is largely due to the lack of dimensional similarity in all of the factors involved. Research work requiring full-scale equipment can only be carried out in the field, and in most cases requires a large outlay of capital. Owing to this large financial risk, companies are not disposed to take chances upon unproven methods or equipment. Or, in the case where manufacturers have developed special equipment, the introduction of this into practice is often delayed or prevented, as even the cost of installation and loss of operating time may be considerable. Further, there remains the general dislike and often passive resistance on the part of many operators to the use of apparatus with which they are unfamiliar. Often there is a lack of incentive, a willingness to let "well enough" alone until such time as economic conditions provide a situation demanding more efficient equipment and methods of operation.

Year of Progress

The past year will stand out prominently in the history of progress in the petroleum industry, not necessarily due to any particular outstanding development, but rather to the most thorough and painstaking survey of the industry, in all its branches, made from within. This was accomplished as a result of the creation, by the President of the United States, of the Federal Oil Conservation Board, for the purpose of making a study of the Nation's future supply of petroleum.

This survey has been made by a committee of the American Petroleum Institute in order to cooperate with the Federal Oil Conservation Board.

This comprehensive, authoritative and up-to-date report is the outstanding publication in the field of petroleum as regards the problems of supply and demand.

In addition to the facts and figures presented and the knowledge gained therefrom, one of the most important things emphasized by the A. P. I. report is the recognition of the need of cooperative research within the industry itself. While the statement in the report bears directly upon oil production, it is equally true as to all other branches of the petroleum industry.

Many refineries have been in the past and at present are conducting research work, resulting often in duplication of effort. During the past year there has been much evidence of less reluctance to exchange by publication, information so gained, resulting in a wider and growing spirit of cooperation and adding materially to the art of refining. Reluctance, however, on the part of companies who have invested large sums toward the furtherance of research is only natural, and it is only right that they should benefit by any financial rewards that may result from their investment and efforts. At the same time, where duplication is incurred, cooperation would result in large savings, both in money and effort; and would enable a much more extensixe field of research to be covered in the same time, resulting in more rapid progress in the industry as a whole.

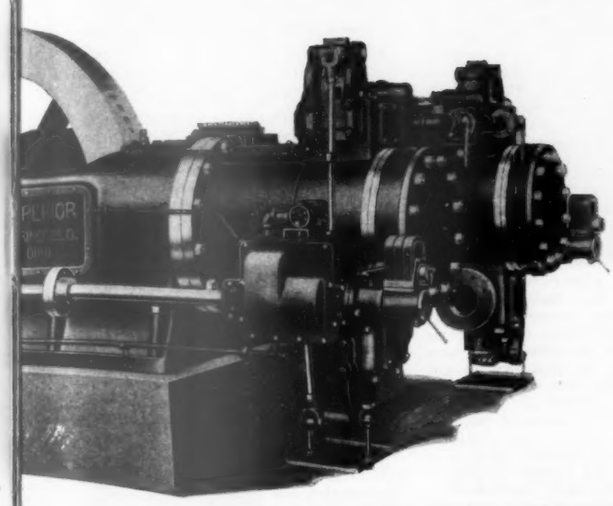
In addition to this cooperation between oil companies there should also be developed better cooperation between manufacturers of equipment and its users. H. C. Parmelee has pointed out in detail the reasons and causes which, in the chemical industry, underlie the lack of such cooperation; and which he classes as one of the wastes of industry. Manufacturers of equipment have in many cases spent large sums in experimental research during the development of their equipment, and so likewise have many of the oil companies in the development of their processes and methods of operation. Highly competitive conditions make each party unwilling to disclose to the other full and necessary information. Full cooperation can only be obtained when business ethics have reached the point where confidential information will be scrupulously guarded by both parties and not used in any way detrimental to the interest of those who furnished it.

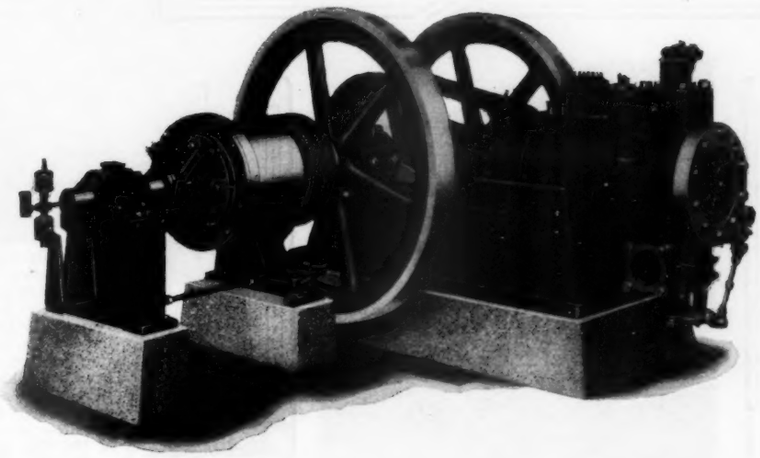
In many cases much of the secrecy maintained is needless and unwarranted. There is consequently economic loss and a slowing up of progress. . . .

Opportunities for Engineers

The petroleum industry, owing to the diversified nature of its activities, is a fertile field for the application of technical knowledge in all its branches. Its problems are such as to demand engineering ability of a high order. The work is not confined to any specialized field, and the services of geologists, mining engineers, civil engineers, mechanical engineers, electrical engineers, marine engineers and chemical engineers are needed and made use of.

In the earlier days development from force of circumstances was brought about almost eitirely by empirical methods, when the pioneers had to feel their way step by step without much to guide them except what had been done in other fields





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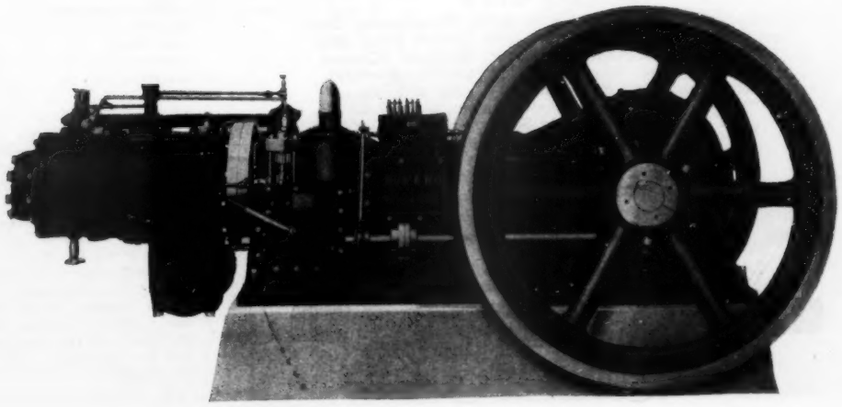

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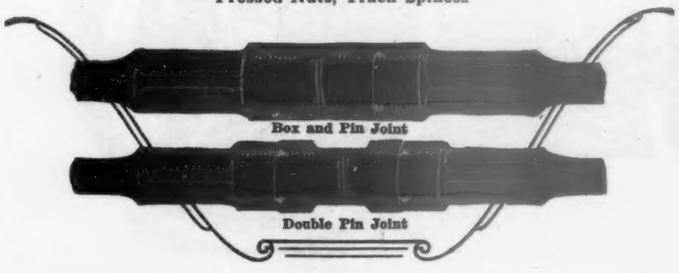
KANSAS CITY

Manufacturers of Sheffield New Billet Reinforcing Bars, Rail Steel Reinforcnig Bars, Open Hearth Steel Merchant Bars, Merchant Iron Bars, Sheffield (Copper Bearing) Steel Blue Annealed Sheets, Sheffield Sucker and Pull Rods, M. C. B. Car and Locomotive Forgings, Oil Field Forgings, Machine and Carriage Bolts, Lag Screws, Rivets, Hot Pressed Nuts, Track Spikes.



somewhat allied in nature, experience was, as usual, the great teacher; and the petroleum industry then developed a large number of experienced practial oil men. To these men great credit must be given for their accomplishments and for the progress made in the past. Practical experience in the petroleum industry is essential, as its complex problems do not in most cases lend themselves to exact scientific solution. The practical oil men have, however, recognized the beneficial results gained by the application of technical knowledge to their problems, with the result that for some time there has been a gradually increasing influx of technically trained men into the industry.

Institutions of higher education, for some years past, have been called upon extensively by the industry to supply recruits for its engineering forces. Some universities, where the demand has been the greatest, due to proxmity to the large oil fields, have felt it desirable to introduce special courses in petroleum engineering. However, owing to the wide activities of the industry the graduates of the older and more general courses of mechanical, civil and chemical engineering also find equally ready employment.

There is no question, however, but that the general engineering training, due to the necessary contacts and diversity of technical knowledge required, should stress particularly the fundamental sciences of physics and chemistry, particularly the former. A knowledge of geology is an asset. Many students supplement their college training with summer work in the oil fields. Dr. Masson recommends that refiners employ more young technical men, and suggests that they be employed before graduation so that they could combine the practical plant training with their studies.

Some of the oil companies have regular supervised training schools for the young engineers entering their employ. The opportunities for engineers in this line of work are extensive and the problems being solved are complicated in many ways so that they call for men with sound and thorough technical training, ability and experience.

Annual Report Tells Of Oil Activities of Bureau of Mines

The annual report of the director of the Bureau of Mines to the Secretary of the Interior, covering a period before the recent transfer of the Bureau to the Department of Commerce, says:

The Bureau of Mines has pointed out methods of preventing, or at least greatly reducing, enormous losses that have prevailed in the oil and gas industries. Operators have been impressed with the advantages in the use of mud-laden water for protecting well casing from corrosive waters, keeping water from entering oil-laden sands, and preventing the escape of oil or gas into porous beds penetrated in reaching a productive formation. The Bureau has also called attention to the use of cement for sealing off waters below or above producing strata, and has shown how "wild" wells could be controlled.

When attention was called to the vast deposits of oil shale in Colorado and adjacent States and their value as potential sources of motor fuel, the Bureau began investigating the composition of these shales and the recovery of gasoline and other products from them. The Bureau has studied the types of retorts used in Scotland and other countries where oil shales have been worked, has made many small-scale tests, and has accumulated a large mass of data bearing on temperatures, rate of distillation, and other factors that determine the yield and quality of the products. Congress in 1925 made an appropriation for the construction of a pilot distillation plant to be operated by the Bureau. A site for this plant has been surveyed in Colorado and plans for the layout of the plant and specifications for the necessary equipment are being prepared.

The Bureau has studied the problem of preventing or lessening the enormous financial losses caused every year by the corrosion of oil field equipment. In many oil fields are porous beds containing waters that quickly corrode iron and steel equipment, riddling well casing in a few months. Entire fields have been damaged or ruined by water that entered the productive sands through corroded casing. In Kansas alone the losses from underground corrosion in the producing fields are believed to exceed $3,000,000 yearly.

In many oil fields the deposition of paraffin from the crude oil entering a well is a problem of major importance. In one field in the Rocky Mountain region the cost of removing paraffin from rods and tubing in 1924 was more than $500,000. Laboratory study of the characteristics of the wax has indicated that removal methods cheaper and quicker than those in use are possible. A study of production methods has also indicated that often the deposition of paraffin can be prevented.

A process for cracking tars and heavy oils and thus obtaining gasoline and illuminating oils from them has been devised, which it is believed can be applied to natural tars and to extracting oil from oil-soaked sands, such as exist in enormous quantities in certain California counties.

The rapid increase in the use of oil as fuel on seagoing vessels has made the pollution of coastal waters by oil a matter that can not be regulated satisfactorily by individual nations. Many maritime nations have passed laws to prevent, or to reduce to a minimum, the pollution of their territorial waters by oil, but as no nation has jurisdiction over the open sea there is nothing to prevent waste oil being discharged there and carried by wind and waves into territorial waters where it may become a source of damage and possible danger. At the request of the State Department, the Bureau is studying the changes that occur in oil discharged on the open seas and exposed to the action of wind, waves and sun for some time.

Although most desired as a lifting gas for balloons and airships, helium will undoubtedly find other uses if the cost of production can be lowered. For instance, it can be used instead of nitrogen in electric light bulbs. Practically all the helium now available, however, is recovered from natural gas by the Government plant at Fort Worth, Tex., and is controlled by the Government. Research into the recovery of helium began during the World War, and in this research the chemists of the Bureau of Mines have taken a leading part. At Washington the Bureau has a cryogenic laboratory where experiments relating to the recovery and purification of the gas are carried on. The Bureau also has charge of the recovery plant at Fort Worth, Tex., and directs work at repurification plants at aviation fields where helium that has been used in balloons or airships is freed from the atmospheric gases that have diluted it.

Helium seems likely to find a new and important use in the conduct of diving and tunneling activities as the result of tests made at the Bureau's Pittsburgh experiment station. When mixed with oxygen, helium forms an atmosphere that is as breathable as normal air, and the tests indicate that the use of helium-oxygen mixtures materially reduces the time of decompression — the process to which divers and men who have worked in compressed air are subjected before they enter outside air. As a consequence the hazard of compressed-air illness, or caisson disease, among tunnel workers and divers can be greatly lessened.

MARTIN & SONS' FOLDER

H. P. Martin & Sons of Owensboro, Ky., have issued a folder describing the Martin portable vise stand and pipe bender. This handy and compact piece of equipment is well displayed with several illustrations portraying the numerous services that may be quickly rendered by its use.

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Long ago, as the pioneer engine builder to enter the industrial Field, Hercules decided that the duty of an engine was, solely, to create and deliver power.

Power—got in the easiest, quickest, most economical way.

But Power!

That is why you will find dependable oil field equipment powered by Hercules—the engine with approximately one-third the number of parts of comparably sized engines.

Not for an instant will Hercules suffer anything to interfere with its manufacture of the creators of power.

For simplicity is strength; precision is honesty.

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HERCULES
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Wish Everybody Everywhere

A Merry Christmas

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And when it comes to Screens, Packers, Setting Tools, Etc., in fact everything below the casing, we want to do more than our part to make this wish come true.

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FEDERAL CONTROL OF COAL TALK MAY BE EXTENDED TO PETROLEUM

By Charles E. Kern

WASHINGTON, D. C., Dec. 14.—There is sufficient indication that the coal industry will be subject to legislative discussion with the object of giving it governmental control to place not only the owners of coal land but also the oil industry upon notice. While there is a lack of definite program for the control of these industries they are both placed in jeopardy because it has long been understood at the Capitol that whatever restrictive measures are enacted affecting coal will be applied to petroleum. If coal legislation can be enacted a number of legislators are determined to force an amendment to such legislation applying its principles to petroleum. Therefore, the oil industry should keep itself informed and be prepared at all times to act upon the defensive.

President Coolidge in his message to Congress calls especial attention to the "perennial conflict in the coal industry that is going on to the great detriment of the wage earners, the owners and especially to the public." He favors regional consolidation of coal interests and more freedom in the formation of marketing associations, under the supervision of the Department of Commerce. Freedom in the formation of marketing associations will be welcomed not only by the coal industry but by the petroleum interests of the country but the advisibility of supervision of these industries by the Department of Commerce will depend upon the kind of supervision that might be provided by Congress.

The President calls attention to the fact that the National Government has little or no authority to deal with coal, which he refers to as a vital necessity of the life of the country. He says:

"It has permitted itself to remain so powerless that its only attitude must be humble supplication. Authority should be lodged with the President and the Department of Commerce and Labor, giving them power to deal with an emergency. They should be able to appoint temporary boards with authority to call for witnesses and documents, conciliate differences, encourage arbitration, and in case of threatened scarcity exercise control over distribution. Making the facts public under these circumstances through a statement from an authoritative source would be of great public benefit. The report of the last Coal Commission should be brought forward, reconsidered and acted upon."

It should be observed that the President does not say that the report of the last coal commission should be adopted. He does say that it would be acted upon which is very different and leaves open the entire question of such legislation for full consideration.

In a popular sense, it cannot be said at this time that there is any widespread demand within or without Congress for drastic coal legislation. Throughout the eastern States the attention of the public has been directed toward the use of substitutes for anthracite coal. There is a general expectation that the strike in the anthracite regions will be over by the time severe weather sets in. A failure to bring about a resumption of production undoubtedly will stimulate Congressional action. Representative Allen E. Treadway, of Massachusetts, has introduced in the House two bills dealing with the anthracite coal problem both of which are similar to measures introduced last year. They give the President authority to intervene in case of coal strikes or similar emergencies which tend to work hardships to the public.

"I have hesitated about again bringing up this subject," said Representative Treadway, "Realizing that the administration desires the people to show that they are independent of the anthracite producers. In this I am in hearty accord."

Mr. Treadway has introduced one new feature in his coal bills by specifically providing that during any intervention there shall be payment of just wages to those employed in the mines.

"I predict," said Mr. Treadway, "that in view of the present-day emergency, the bills I am reintroducing will not receive the cool reception at the hands of Congress that they did formerly."

In respect to fixing the price of coal Colonel J. Franklin Bell, engineer commissioner of the District of Columbia, expressed his disapproval of that plan so far as the Capital city is concerned. We recall that in the past when there was a minimum and maximum price on coal, practically all of the dealers adopted the maximum price. The situation is still further complicated by the fact that there is a wide difference in the character of the coal which results in the very poorest product bringing the maximum price and practically eliminating price differences by any kind of competition. The truth is there has been so much failure in price fixing that a great many people who believed in it and went through the experiences of the war feel very uncertain about any real relief coming from the abandonment of an open and true market.

However, there are a good many people who believe that the President should be endowed with authority to recognize an emergency and to take suitable action. They believe that if this authority actually was placed in the hands of the President, it would have a deterrent effect that would make unnecessary its application. With the conservative ideas of President Coolidge, a great deal of support might be obtained for a measure of this kind but the real objection to it is seen by a good many representatives and senators who believe that once on the statute books such legislation might throw the country into a state of uncertainty when a president not so conservative as Mr. Coolidge should be in the White House. Those who favor placing authority in the hands of the President to deal with such an emergency explain that the President might be authorized to act practically as a receiver for a bankrupt corporation, carry on the business, pay all reasonable expenses, and when it was believed the emergency has passed, to turn the property back to its owners with whatever assets of all kinds might be due them.

While radical legislation seems to be less prominent than in the previous Congress, it must be remembered that factional enthusiasm for such legislation is often stirred up in a very brief time. This fact is in itself a warning to the oil industry to keep in close touch with development here.

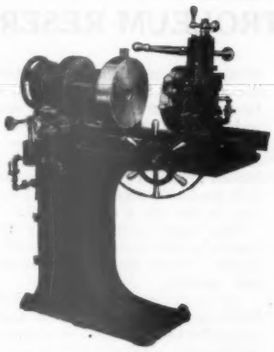
MEXICAN FIELDS

(Continued from Page 71)

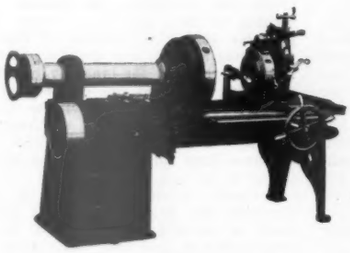
Tamaulipas, bordered on the south by the Tamesi River, which is the boundary between the States of Vera Cruz and Tamaulipas at this point. This tract lies just west of the Los Esteros of the American International Fuel Co. This negotiation, concluded in the United States between principals, is just known here. The terms are not. The property has long been owned in fee.

New Dehydrating System

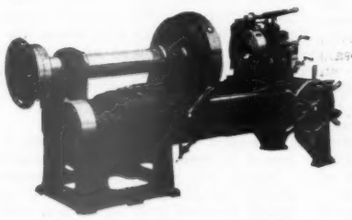
A new system to cut oil is being installed at the East Coast Oil Co.'s pumps at Topila, which, it is claimed, will revolutionize the cutting of oil from water and sediment. E. A. Fennell is putting in the plant, the system being the invention of V. C. Crites of Los Angeles, who, with H. E. Phillips, an engineer of Toronto, Canada, is here installing the plant for the Fennell interests. It will cost, it is reported, $35,000. In brief, the system has been described as follows: It is known as the caicium chloride process. It consists of heating the fluid and the calcium chloride separately to a heat of 260 degrees Fahrenheit, then running them together, and the calcium chloride acts as a gathering agent and removes the water and sediment.



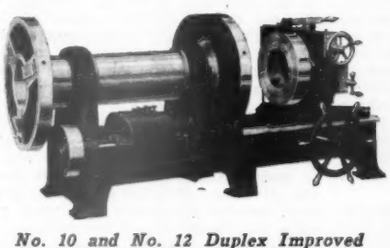
No. 2 B & K Improved Pipe Machine. Pipe capacity ¼" to 2" diameter.



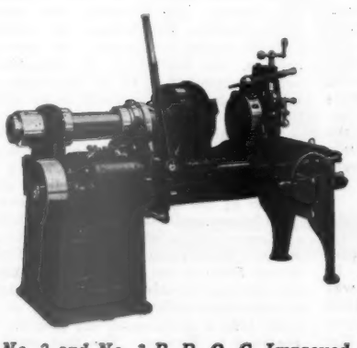
No. 2 and No. 3 Peerless Improved Pipe Machine. Capacities ¼" to 2" and ¼" to 3" respectively.



No. 4 Peerless Improved Pipe Machine. Gear box drive capacity 1" to 4".



No. 10 and No. 12 Duplex Improved Pipe Machine. Capacities 3½" to 10" and 4" to 12" respectively.



No. 2 and No. 3 P. D. Q. C. Improved Pipe Machine. Capacities ¼" to 2" and ¼" to 3" respectively.

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Better and Cheaper

Fifty years of experience with pipe threading problems have made possible the high state of mechanical efficiency expressed in B & K Pipe Threading Machines. For strength and serviceability they are unexcelled. Some of the earliest B & K machines—built fifty years ago—are still in service.

All B & K Pipe Threading Machines are regularly equipped with Peerless dies having curved eccentric relief. Thus friction is minimized and more threads with less power made possible.

Write for complete catalog.

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of the N. O. Nelson Mfg. Co.
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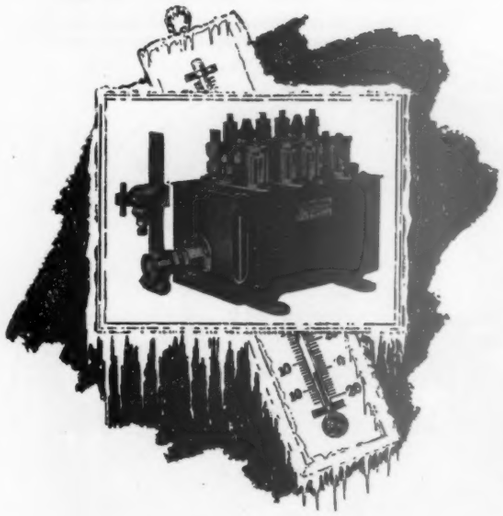
PEERLESS B&K DUPLEX P.D.Q.C.

Positive Lubrication in Freezing Weather



WHEN the thermometer drops to zero and the oil in the pipe lines congeals, it is human nature to forget the usual oiling or to neglect to give it the added attention required at this time. The result is that scored cylinders and frozen bearings prevail, tying up production.

Cold weather does not affect the operation of McCord Lubricators—they will pump any kind of oil against any pressure up to 2000 pounds, requiring no attention other than the occasional filling of the reservoir.

McCord Lubricators on your pumping and drilling units are the best assurance for continuous production during this Fall and Winter season, that can be purchased.

Your nearest National Supply Company branch carries McCord Lubricators

McCord
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Standard of the Oil fields

McCord Radiator & Mfg. Co., Detroit
LUBRICATOR DIVISION

A GERMAN VIEW ON AMERICA'S ESTIMATED PETROLEUM RESERVES

In Deutsche Bergwerks Zeitung, of October 27, an article was published under the heading "The United States and European Oil Fields," which is given below in a slightly abridged form. It is of interest chiefly as presenting a German view of the petroleum situation, which is naturally regarded from a somewhat different angle than in the United States.

In the year 1920 a report issued by a number of petroleum experts created considerable sensation because it contained an estimate of the United States petroleum reserves, which indicated that they, at the then existing rate of production, would last only for another 20 years. The publication of this report served a useful purpose, as it caused the United States authorities to take an active part in regard to foreign oil occurrences and their exploitation.

Quite recently a committee of 11 prominent men of the American Petroleum Institute has made a new investigation of the United States oil reserves and reached the conclusion that there is no imminent danger of their early exhaustion. The report of this committee has been reproduced in a number of American and European technical journals, generally without critical comment, but a close examination of the published results of the investigation makes it difficult to share the optimism of the American committee.

Recoverable Reserves

The committee estimates the recoverable reserves of oil in the known fields of the United States at 5,300,000,000 bbls., which with a yearly production of 700,000,000 bbls., will suffice for less than 8 years. In view of this comparatively small quantity of known reserves, the optimism of the committee appears to be founded almost exclusively on processes yet unproved, and therefore not yet commercially important. In the first place, it is shown that the known oil fields of the United States, after exhaustion of the oil recoverable by current methods, will contain a reserve of 26,000,000,000 bbls., a considerable part of which can be recovered by new methods of working. According to calculations, the present methods recover hardly 20 per cent of the total oil in the sands, thus leaving about four-fifths behind. Recent investigations in America, however, confirm the experience gained in German oil fields that small layers of clay interbedded with the oil sands will often make it impossible to obtain a high percentage oil recovery. Moreover, the shaft and gallery method of working exhausted sands is likely at first to be a difficult working problem in America. On the other hand, results are to be expected from the progress made in the technique of deep drilling.

An enlightening part of the report appears to be that which states that only a small part of the possible oil-bearing beds of the United States have been tested hitherto, and that consequently further discoveries of oil are to be reckoned with.

This is no doubt true, but, in general, the working conditions will be less favorable than on already exploited areas and the cost of winning the oil will be considerably greater. The great question is as to whether such new discoveries can be made to keep pace with the increasing requirements. According to the experience of the past five years, this question must be answered in the negative.

Reserves and Output

It will be remembered that the estimated reserves in 1920 were 7,000,000,000 bbls. At that time the annual production was about 443,000,000 bbls. In 1922 another estimate of the reserves was made, which placed them at 9,150,000,000 bbls. Although much intensive prospecting has been done since 1922, this estimate was obviously too optimistic. The report of the committee referred to contains an estimate of the reserves in 1924 of 5,300,000,000 bbls. with a yearly production of about 700,000,000 bbls., the ratio of reserves to annual production has, therefore, become much more unfavorable than it appeared in 1920, showing that new discoveries are not keeping pace with the production. It is logical to expect that in future production will gradually diminish with a consequent rise in the price of crude oil.

The report mentions as a practically inexhaustible source of liquid fuel the United States deposits of oil shale, coal and lignite.

It is a somewhat remarkable fact, however, that so far as is known, and notwithstanding a large number of experimental plants, there is not a single plant working on a large scale commercially.

Successful endeavors have been made by means of cracking processes to increase the production of benzine. According to the committee's report, it is probable that the quantity of fuel oil disposable as such will diminish through its being required for cracking into light products, and thus the competition between fuel oil and coal will be ended. The reaction thus caused on American railways and in shipping, which now consume large quantities of fuel oil, remains to be seen.

Probably developments will be in a direction that petroleum fuel oil will be used in increasing proportions in the preparation of light oils, and that it will be replaced by the much less saturated heavy oils obtained in the retorting of solid fuels.

The report directs attention on the importance of petroleum imports from South America. The United States regards itself as the natural market for the South American oils, which are only quite in the beginning of their development. They hope from these imports an essential supplementing and prolonging of their own reserves.

Technical Progress

There is much optimism shown in the report in regard to technical progress.

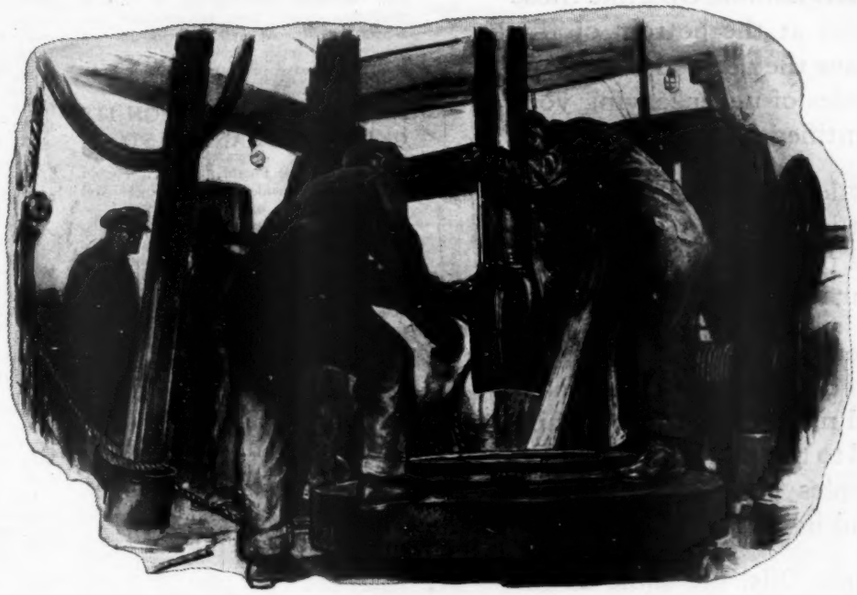
Those who remember the results in regard to America's foreign oil policy, which followed the report and estimate of 1920, are probably expecting similar results from the latest report. The task of the Americans to secure their future oil supplies will not be rendered easier if the attention of foreign countries is directed to the difficult nature of the task. The course of development of the South American countries is of the greatest importance to the United States. America has in that sphere two opponents to reckon with.

In the first place come British interests, which after the war sought through a large-scale concessions policy to exclude United States interests from the oil fields. The United States, however, resisted this policy with good results, but the struggle is not over.

The other opposing element is the growing disinclination of the South American people to permit their oil resources to be exploited by alien interests. Only quite recently it was announced that Mexico, like Rumania, was seeking to nationalize the foreign oil interests by new mining legislation. In this connection, the hesitation of Colombia to permit exploitation of its oil fields will be remembered. Venezuela is an exception.

The United States also is more considerably interested in the oil regions of Western Asia than in 1920, where her intrusion was regarded with little satisfaction by the great European powers.

In consequence of the great dependence of Europe on oil imports from the United States, the exhaustion of the United States fields is not only a North American economic problem and an international petroleum policy problem, but at the same time a question of the greatest importance to Europe. The first result of a definite shortage of oil in the United States would be a reduction in the exports. Some English circles predict a considerable increase in petroleum prices



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by next year. The tendency in Europe, however, is in the direction of extending the use of motor traffic. The future supply of oil from America seems to depend upon a questionable surplus that may remain for export to Europe, and it seems that it is desirable to at once establish means for supplying requirements from home resources. The retorting of solid fuel seems to offer the best prospect for a mineral oil supply. The price relations between coal and oil have already enabled some of the German retorting undertakings to reach a profitable stage. Low temperature carbonization of coal will present quite a different economic aspect with a substantial increase in petroleum prices.

MAGNOLIA DREW UPON ITS OKLAHOMA-KANSAS STOCK

The Magnolia Petroleum Co. drew on its stocks of crude oil in Kansas and Oklahoma to the extent of 355,295 bbls. in November, an average of 11,843 bbls. per day. The company's pipe line department ran 970,726.21 bbls. of crude from wells in Oklahoma and Kansas, a daily average of 32,357.54 bbls., and its pipe line shipments were 1,303,126.04 bbls., an average of 43,437.53 bbls. per day. Its November runs from the Oklahoma-Kansas district were 2,334 bbls. a day less than in October and its shipments were 283 bbls. a day less.

The company's crude oil runs from all fields where it has connections were as follows in November:

Crude Oil Runs for November, 1925	
Burbank	65,918.83
Bristow	.....
Hewitt crude	84,819.63
Healdton	203,700.38
Cushing crude	306,863.69
Yale crude	52,655.10
Cement crude	20,250.77
Duncan crude	49,072.64
Augusta crude	37,515.81
Walters-Beaver Creek crude	10,627.29
Wewoka	139,302.07
Total Oklahoma and Kansas	970,726.21
Luling	87,451.34
Thrall crude	1,082.89
Electra	115,408.53
Burk crude	80,138.46
Henrietta crude	6,387.82
Heavy Corsicana crude	8,456.14
Light Corsicana crude	22,297.88
Comanche crude	26,387.02
Olden crude	31,602.37
Stephens crude	16,384.35
Coleman crude	548.68
Mirando	53,644.32
Mexia crude	58,855.15
Archer	71,446.09
Lytton Springs	179,173.33
Iatan crude	2,175.45
Total Texas	761,439.82
Haynesville crude (Fortuna)	6,472.63
Bull Bayou crude (Fortuna)	36,941.98
Cotton Valley crude (Fortuna)	24,877.60
Total Louisiana	68,292.21
Union crude	None
El Dorado light crude	71,406.22
East El Dorado	1,855.94
Total Arkansas	73,262.16

ANGLO-PERSIAN SENDS OWN OIL TO NANTES

The most important consideration affecting the trade of the Nantes district with the United States in recent years is the diversion of the district's source of supply of gasoline, kerosene and fuel oil from America to Persia. All mineral oils are imported by the "Compagnie Occidentale des Produits du Petrole" and stored at its oil port, Donges, near St. Nazaire, at the mouth of the Loire. The Anglo-Persian Oil Co., pending the completion of its oil port at Abadan, Persia, obtained the stocks required by the French company from the United States with the exception of about half of the fuel oil which was brought from Mexico. The accommodations at Abadan now allowing of the exportation of oil to the Nantes district from the Anglo-Persian's stocks in Persia, has resulted in a decrease in the receipts of mineral oils from the United States from 558,700 bbls. in 1923 to 47,400 bbls. of gasoline only during the first nine months of 1925.

LINE INCREASES CAPITAL

Crusader Pipe Line Co. of Arkansas has filed application at Dover, Del., for increase in capital from $4,500,000 to $6,000,000.

Dry Hole Percentage Low in Northwestern New Mexico Fields

FARMINGTON, N. M., Dec. 12.—Eighty-three per cent of the test wells drilled on 13 structures in the San Juan Basin have been productive of oil or gas in paying quantities, a geological survey of the region shows. This good record is made more impressive by the fact that the average gravity of oil found there is over 60 degrees.

This nearly circular basin, over 150 miles in diameter and containing about 26,000 square miles, is completely walled in by what is known as the Hogback uplift. This is an elevated structure situated between the backwashed slanting wall proper and the several mountain ranges that are interlinked to complete the circle. On the rim and within the basin 17 structures have been identified.

On the western rim of the basin the Midwest Oil Co., drilling on the Hogback structure of the Navajo Reservation, has completed 10 wells, all producing from sands 700 to 800 feet deep, that had daily initial capacities ranging between 260 to 1,400 bbls. On the Rattlesnake structure of the western rim the Continental-Santa Fe has completed 12 wells, at 700 to 800 feet, which make from 50 to 4,000 bbls. daily. On the Table Mesa structure of the west side the Continental has one well making 320 bbls. at 1,340 feet and is drilling a second.

On the Ute Dome to the north, the Producers & Refiners Corp. has a gasser at 2,380 feet making 72,000,000 feet daily and the Midwest has two gassers at the same depth making 35,000,000 feet each. On the Barker Dome the Gypsy Oil Co. has a gasser at 3,200 feet making 35,000,000 feet daily.

In the vicinity of Durango, Colo., which is on the north rim of the basin, a large gas producer has been completed, and between this, along a northwestern arc of the rim, and the Hogback and Rattlesnake Domes lies the Red Mesa structure on which Oklahoma men are drilling three tests. W. H. Hall of Oklahoma City is drilling one, E. J. Erdman of Oklahoma City another, and Joe Murphy of Bristow and associates a third.

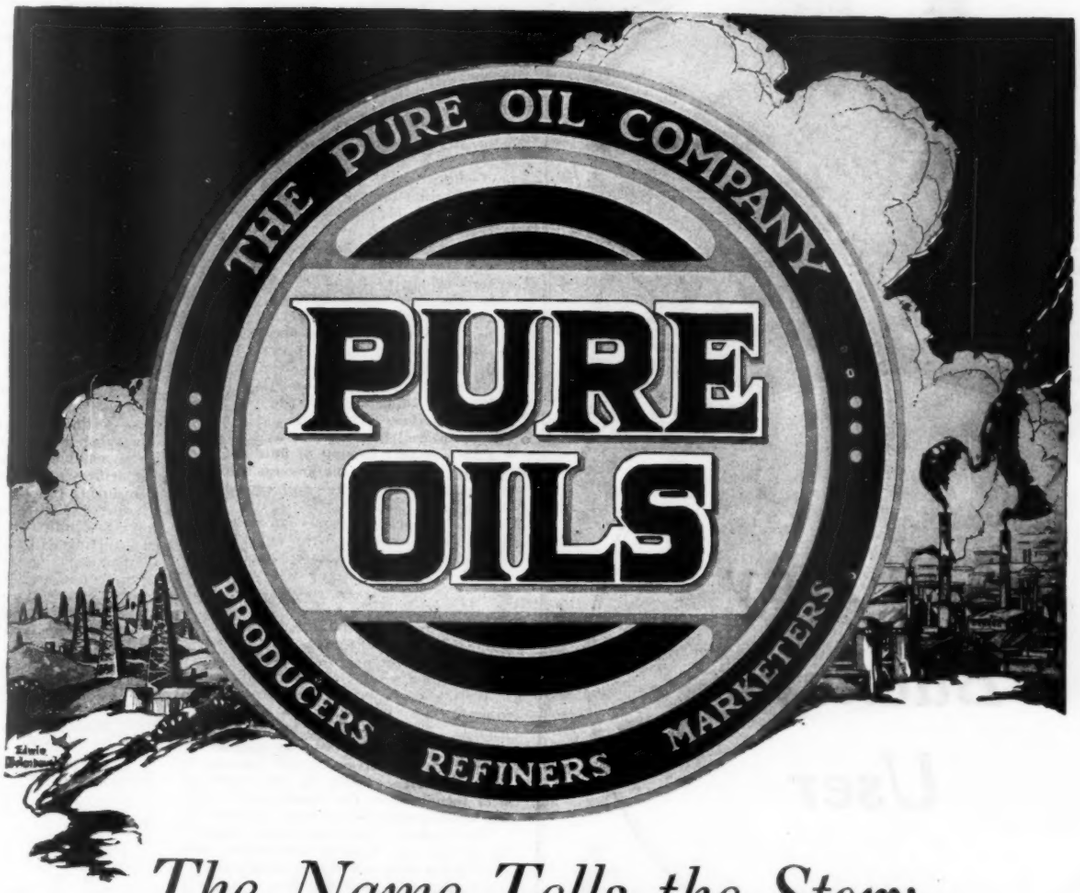
Virtually all of the remainder of the rim, where structural formations are in evidence, has been leased and locations have been made on the east, southeast, south and southwest. Geologists of The Texas Co. and the Marland Oil Co. are now working on the eastern and southern areas. C. W. Hicks and W. H. Helmerich of Tulsa, C. F. Colcord of Oklahoma City and others are drilling on the La Ventana structure on the southeastern arc.

Large areas on the rim and within the basin are now controlled by the Gypsy Oil Co., the Midwest Oil Co., the Producers & Refiners Corp., the Continental Oil Co. and associates, the Standard of Indiana, The Texas Co., the Signal Oil Co. of California, the Sun Oil Co. and the Marland Oil Co., and many smaller and independent concerns.

Within the basin are several small pools, near Farmington and Aztec. Structure discoveries are made by chance because surface indications nearly everywhere are meager. A refinery at Farmington is expected soon to increase its capacity to 3,000 bbls. a day.

NEW SOURCE OF HELIUM?

German scientists claim to have discovered a new gas, in monazite, from which gas mantles are made. Experiments show, the scientists say, that helium can be produced from the mineral in paying quantities so hydrogen may soon be discarded for inflating dirigibles. The discovery was made by industrial research workers studying the extraction of thorium nitrate from monazite sand. They say one gram of the sand heated to 900 degrees centigrade yields from ½ to 1½ cubic centimetres of helium.



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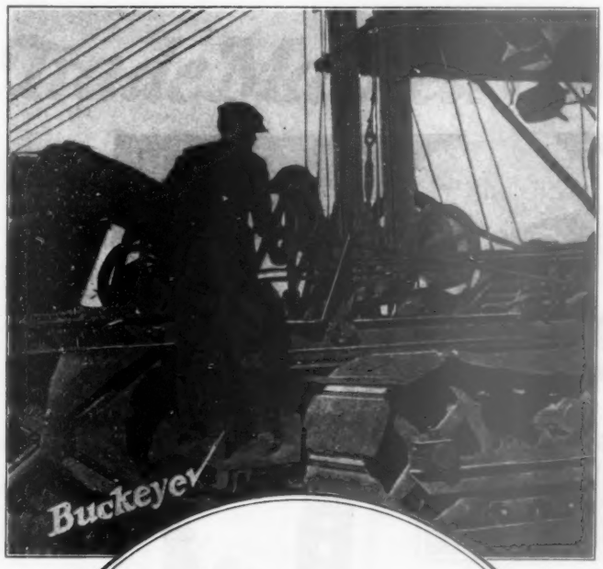

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DEFINITE MATHEMATICAL RELATION IN BEHAVIOR OF OIL RESERVOIRS

By Stanley C. Herold
Petroleum Geologist, Stanford University, California

Our study of Volumetric Control reservoirs has thus far included but one aspect of performance; namely, the behavior of the reservoirs on natural decline during the course of elapsed time. Alterations in theoretic performance were shown to bear a definite mathematical relation to this natural decline.

We must now approach the subject of performance from a slightly different point of view, and show that natural decline defines merely one of three important mathematical paths toward the state of equilibrium for the reservoir. In addition, we should consider one important mathematical path away from the state of equilibrium. In the simpler terms of mechanics these four paths may be described briefly as follows:

I. Natural decline by percentage extraction. The orifice is set and maintained so as to deliver 100 per cent of its capacity, or some definite proportion less than 100 per cent of its capacity, throughout the life of the reservoir.

II. Restrained decline by constant rate extraction. The orifice is continually or intermittently set so as to deliver a given constant amount of fluid per unit of time. This constant amount must, of course, be less than the full capacity of the orifice.

III. The phenomena accompanying the filling of a reservoir with fluid from a natural source; for example, on the closing of a well, the casing fills with fluid derived from a natural reservoir to which it is connected.

IV. The phenomena accompanying the filling of a reservoir at a constant rate; for example, an operator fills an empty solution or gas tank with fluid by means of the necessary pumping apparatus. The apparatus, of course, has a definite capacity.

These four paths, equally subject to mathematical analysis, in one manner or another strike closely to the heart of field technique in the handling of artificial and natural reservoirs of oil and gas.

The present discussion, while confined to Volumetric Control reservoirs, will provide us with additional means of recognizing and understanding Capillary Control.

Percentage Extraction

526. We have found the velocity of production to depend upon the size and condition of the orifice, and upon the state of the reservoir interior. The orifices are frequently equipped with valves so that we may regulate the rate of flow within possible limits to suit our will. Suppose the orifice of a reservoir is

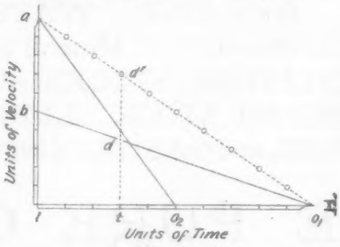

Figure 526

capable of delivering fluid at the rate a in Figure 526, but for some unspecified reason we wish delivery at a less rate b, and maintain the ratio of b/a throughout life. Our velocity-time curve is then the line bO_2. Now let us suppose that we opened the orifice fully at every time t we desired to make an observation upon the rate of flow. The reservoir actually produces at the rate d, but we obtain the quantity d' for a curve which we are to draw. A series of these observations give the line aO_1. What is the nature of the production or "open flow" curve thus constructed?

The lines bO_2 and aO_1 meet at the same point, denoting the end of the life of the reservoir. The area of the triangle $b1O_1$ is actual production, and the area of the larger triangle $a1O_1$ represents an apparent volume of fluid. Had the reservoir been allowed to produce at the full rate continually, the curve described by observations would have been the line aO_2, such that the area $a1O_2$ equals the area $b1O_1$. (Article 515). What is the relation between the areas $a1O_1$ and $b1O_1$?

The rate b represents a definite percentage extraction compared with the rate a. Since the triangles have a base of the same length, it is evident that their areas are proportional to their altitudes; thus the ratio of the apparent volume, measured by open flow tests, to the actual volume produced is the inverse of the percentage extraction. For example, if the percentage extraction is 50, the apparent volume shown by the tests is 200 per cent of the actual volume to be produced.

It is important to note that percentage extraction is merely an interpretation of Case 1, Article 510—a change in the external friction provided by a definite setting of the valve for production. The same setting throughout life furnishes an unvarying percentage extraction rate. It is the establishment and maintenance of the orifice in a constant physical condition during the course of production. The curves of Figure 442 must be fulfilled for any definite setting of the valve, and each setting within the possible range has its particular value of p, the parameter of the equations for the primary function curves, except those which are independent of time. Article 478).

Percentage Extraction and Case 3

527. Percentage extraction by means of applying and maintaining a constant

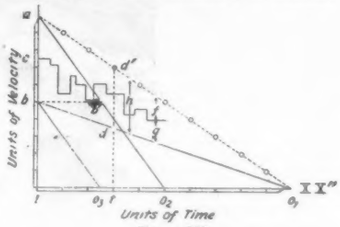

Figure 527

back pressure is not so simple a matter as in the case of applied external friction; yet it seems probable that the operation of all our gas wells is concerned with this very feature. We considered briefly the effects of constant back pressure as Case 3, Article 520. Let us see how percentage extraction is usually obtained by this method. We may use the same reservoir as in the preceding article.

In Figure 527 we again have the full possible velocity a, but this time it is reduced to a value b by the application of the necessary constant back pressure, presumably represented by a line pressure. This back pressure, being maintained at a constant value, forces the actual production curve to be bO_2 in place of aO_2. The ratio of b to a is not maintained; but this ratio squared gives the ratio of the volumes recoverable with and without the constant back pressure. The two lines have, in reality, separate X and X" axes. We place these axes together merely to conform to the present day practice. The line bO_2 is the same as $b'O_2$, for the line aO_2 has been cut on its relative curve through the point b',—the history of the reservoir has been advanced in time by the amount bb'.

We have the volume $a1O_2$ to recover; how may we get it by percentage extraction through constant back pressure alone? Simply by letting this constant back pressure itself become a variable h with time, beginning with a value ba and ending with a value zero, both values measured above the X"-axis. This would be difficult to fulfill in practice even if the operator had complete control of his line pressure, for it would require a perfect mathematical diminution of the back pressure to accomplish the result. The

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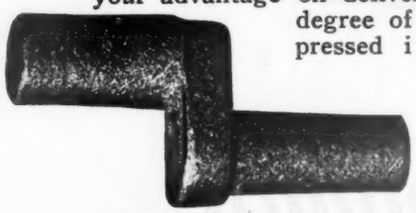

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difficulty is easily removed, however, by combining the effects of constant back pressure and external friction. The two are concordant in action. (Article 320). The constant back pressure may be altering in value f during life, as indicated by the irregular line beginning at c in the figure, and we need only add an external friction g to make up the deficiency between f and h. Theoretically, g will require a new setting of the valve every instant during the course of production. Percentage extraction requires a harmonious percentage variation between h and the potential pressure P; obviously, if a portion f of h is to act as a mathematical constant, the other portion g must be continually regulated in order that the sum of the portions be forced (artificially) to comply with harmonious percentage variation. In practice the variation in the value of the constant back pressure is sufficiently slight so that the variation of g, due to the elapse of time, closely approximates the necessary amount; therefore, one setting of the valve for each change in the constant back pressure will generously satisfy the usual field requirements.

Percentage extraction by this method can not continue indefinitely to the end of the life of the reservoir unless f is prevented from exceeding h in value.

The proper procedure throughout life gives the velocity curve bO_1 with its subtended area equal to that of aO_2. If the usual open flow tests are made during the course of bO_1, we have again the apparent curve aO_2.

When the operator of a gas field tells us that he allows his wells to produce a specified per cent of the open flow rate from each, these are the principles of mechanics which he introduces into the problem for the engineer.

Constant Rate Production

528. Delivery on a basis of percentage extraction from reservoirs of this control always takes place in accordance with the relative curves. The mathematical relations between the various functions, pressure, volume, velocity, acceleration, energy, power, and time, remain unchanged for all per cents. We may say that the laws for delivery are not altered, although the actual equations defining flow possess different parameters for every per cent, except those between pressure, volume and energy alone. The latter equations have parameters which are independent of time; therefore, they are independent of changes in percentage extraction.

Suppose we restrain the production from a reservoir of this control, and allow it to deliver a given amount of fluid per unit of time. We may need only a certain amount of liquid or gas contained in a vessel each hour, each day, or each week; or possibly an oil well is dependent upon a definite number of tank cars per week for the shipment of fluid; and again, possibly a gas well supplies a plant which consumes fuel at a definite constant amount per week. What effect will this restrained production have upon the laws of delivery, and how will the various curves for the reservoir functions appear?

We have, to begin with, the formula for the relation between velocity and time:

$$Ve=K, \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

an equation which merely states the fact that the rate of production is constant as time elapses. By differentiation we obtain the equation for acceleration:

$$Ac=O. \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

And by integration of (1) we obtain the equation for volume:

$$Vo=KT. \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

The cumulative production curve is, of course, an inclined straight line with origin at the left and abscissas measured in time elapsed, as in Hydraulic Control. The inversion of this curve gives the inclined straight line of equation (3).

The Volumetric Control relations between pressure and volume are

$$P=KVo; \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

therefore, the pressure time relation is

$$P=KT, \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

again an inclined straight line. Thus does pressure decline under the specified conditions of production.

The product of pressure and volume is energy; therefore, we may multiply equations (3) and (5):

$$E=KT^2, \quad \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

an equation which can be used in connection with the cumulative gas curve, in case the reservoir is a combination one. This equation by differentiation gives the power-time relation:

$$Po=KT, \quad \ldots\ldots\ldots\ldots\ldots\ldots (7)$$

once more the inclined straight line. This is also an equation which can be used in connection with the gas from a combination reservoir.

529. The curves for the formulas in the preceding article appear in Figure 529, where scales for the functions represented by ordinates are selected in such a manner that declining functions start from the same point a.

Laws of Delivery

These formulas and curves represent the laws of delivery from reservoirs of this control under the condition of a constant rate extraction. The basic mathematical relations between the derived functions are not altered in any way, a fact which is evident from the procedure followed in obtaining the equations. The primary function relations, however, differ from those of natural decline, inasmuch as the six functions vary with time in a different manner.

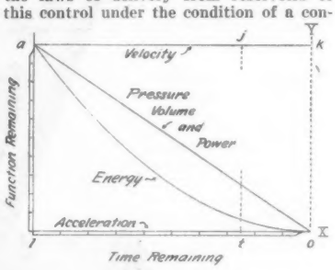


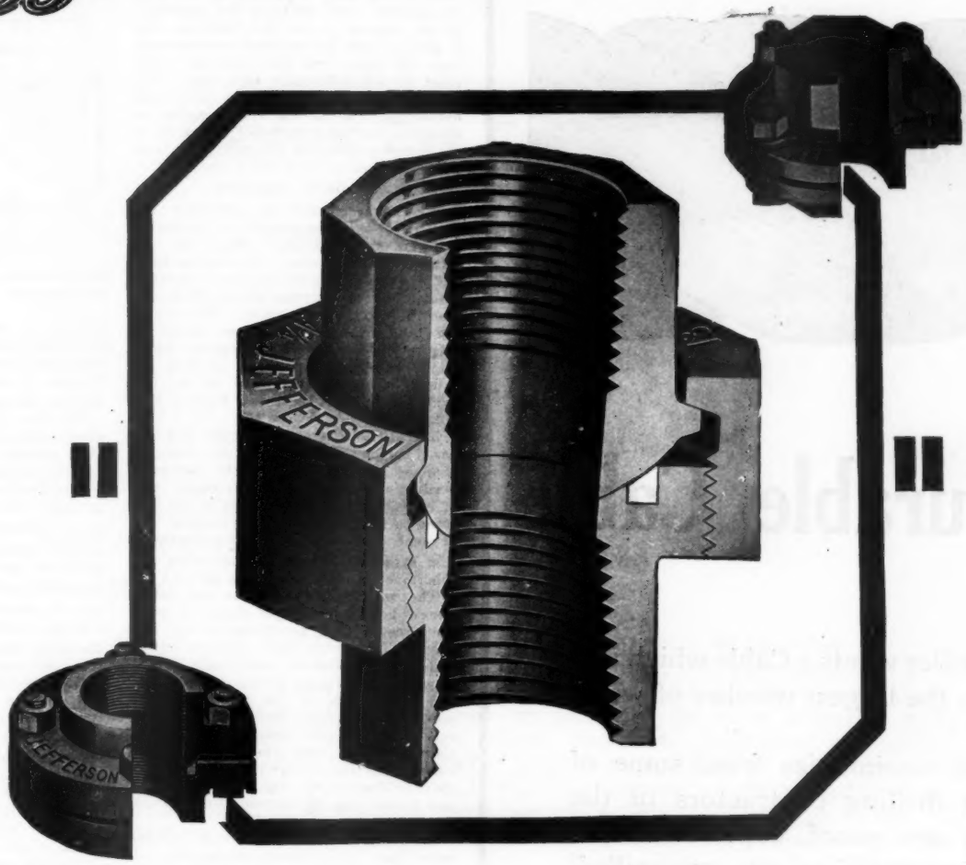
Figure 529

By virtue of the fact that the derived functions bear the same relations irrespective of the manner of extraction, we may still continue to apply the method of cutting Figures 442 and 445 by vertical lines when we desire to determine the status of the reservoir for any particular instant. The cut not only shows the relation existing between the functions at a constant rate extraction, but, furthermore, shows what conditions will be set up in case a change is made from a constant rate to a percentage rate of extraction. Time, as indicated by the cut, is merely reinstated in its normal capacity as a function of natural decline.

The entire volume to be produced by the reservoir is represented by the area subtended by the velocity curve. It may therefore be measured as the area of the rectangle Olak in the figure. The point O indicates the end of the life of the reservoir producing at the constant rate. In practice the point O will not be reached at the time elapsed indicated by the distance from l, for the reason that the maximum velocity attainable does not continue to exceed the constant rate. At some instant t the constant rate overtakes the natural rate; thence onward the latter declines, and the constant rate can not be maintained. The velocity at any time is limited in its maximum value by the size of the orifice and by the state of the reservoir interior. Thus, unless we have complete control over both these factors, we are compelled to accept the inevitable, and either reduce our constant rate or change to percentage extraction. If we choose the former, the curves begin again at the point a with horizontal and vertical scales properly altered, and the history of production is repeated, even to the arrival at a second instant t similar to the first one. The process may be continued indefinitely, reducing at each time t the constant rate. If we prefer to change to percentage extraction, we may adopt the conditions at any time t as 100 per cent, and the reservoir will proceed to deliver fluid in accordance with the curves of Figure 442.

530. A constant rate extraction ne-

Jefferson



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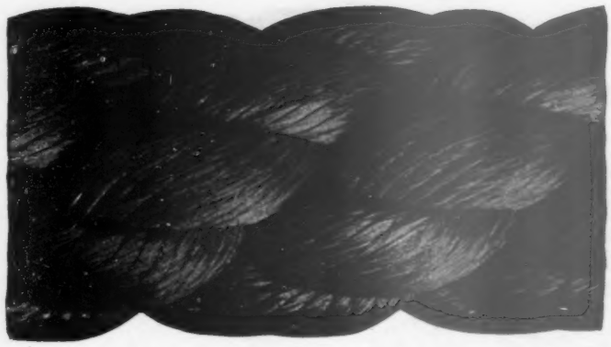

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cessitates an intermittent or continual regulation of the valve at the orifice. If, for example, our daily consumption of liquid from a tank is 5 gallons, we naturally draw intermittently such quantities which total 5 gallons for the day, closing the valve between the drawings. If we attempt to set the valve so that 5 gallons will be delivered continuously each 24 hours, we find that the valve must be set differently each day. The same setting would provide a percentage extraction. It is likewise possible to illustrate the same principle in regard to the maintenance of a constant rate from a gas tank, an oil well and a gas well.

Auxiliary Apparatus

We might install an auxiliary apparatus in the line, capable of regulating delivery automatically. Such an apparatus, or "regulator," has the mechanical property of converting the Volumetric Control on its upstream side to Hydraulic Control on its lower side. The curves for the reservoir remain as shown in Figure 529, although any curves which might be drawn according to data obtained at the delivery end of the line would appear as those of Figures 247, 252, etc.

531. The curves of Figure 529 are based upon the assumption that no changes are made during the course of production, either in the constant rate of extraction, or in the value of the constant back pressure. Let us suppose that at some particular instant t a change is first made in the rate. What effect will this have upon the curves as shown?

The velocity curve breaks and begins a new horizontal course above or below the present one, according to the new rate. The volume and pressure curves merely bend sharply, and begin to approach a new zero point, denoting the end of the life of the reservoir. The power curve breaks and begins its new course toward the same zero point determined by the new pressure and volume curves, and the energy curve bends in a manner similar to that of the pressure and volume curves. Acceleration remains at zero.

A change in the constant rate does not alter the total volume recoverable. If the change is made at the instant t, the rectangle Otjk is replaced by another rectangle of different dimensions, but of equal area. By a series of reductions in the rate we have a series of rectangles, and their total area is equal to that of the rectangle Olak. The latter is equal to the area under the velocity curve of natural decline. Constant rate extraction is a special case involving the application of external friction.

Secondly, if a change is made in the constant back pressure at the instant t, the curves are affected in the same manner as in the case for natural decline: that is, the vertical line tj becomes shifted to the right or left, according to an increase or decrease, respectively, in the back pressure. The decrease or increase in the area of the rectangle Otjk is the direct indication of the effect on the total volume recoverable from the reservoir. The shifting of the line results in an advancement or recession in the history of production. The curves are not altered in position or in slope.

Field operations frequently involve mathematically haphazard alterations in percentage extraction, constant rate extraction, and alterations in constant back pressure, one change following closely after another. Once more we need resort to the use of the recording pressure gauge.

Nature Fills a Reservoir

532. We shall now consider the case in which a type solution or gas tank is placed into communication with a reservoir containing fluid under a pressure greater than that within the tank. Naturally the fluid moves toward the receptacle as long as a difference of pressure exists within the two reservoirs.

In Article 415 we derived the equation between pressure and time for the problem entitled "The Time Required to Empty a Vessel." The present problem is precisely the reverse one; to wit, "The Time Required to Fill a Vessel," with the specification that just as nature previously directed the emptying, she now directs the filling. We may proceed with the mathematical analysis in the same manner as before, and by it we would derive exactly the same equation between

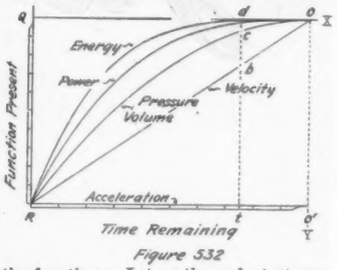

Figure 532

the functions. Let us then adopt at once the formula,

$$P = K T^2,$$

and plot a curve between potential pressure and potential time as in Figure 532. This curve starts from the point R, passes through c and finally reaches O at a position denoting a state of equilibrium.

The two reservoirs, in communication at a common orifice, constitute a complete system per se, and we, located exteriorly to this system, observe the events of the interior by means of an attached pressure gauge. At any instant t the gauge records a pressure tc, but so far as the system itself is concerned, the potential pressure at the instant is dc. In other words, dc represents the difference in pressures on the two sides of the common orifice at the instant t; it is, therefore, the pressure which causes flow from one vessel to the other. The difference in pressures, by definition, is potential pressure.

If, at the instant t, the receiving vessel is disconnected from the other, and its contents are placed in communication with the atmosphere at large by allowing flow, a new system is established, and the potential pressure of the vessel in this new system is tc, the amount of pressure we observed at the gauge.

We are only concerned at present with the potential pressure dc. This pressure is obeying the usual laws for this control; the above equation has the point O as the origin for its curve, ordinates are measured in a positive direction downward and abscissas in a positive direction from right to left, as time remaining. We used this very pressure curve for the determination of the final closed-in pressure of a well in Article 235.

533. If the feeding reservoir is very large in comparison with the receiving vessel, the pressure of the former may be regarded as unchanged between the time R and the time O' in the figure. But suppose there is no such discrepancy between the sizes of the two receptacles; the feeding reservoir is little greater than, equal to, or even less than the receiving vessel in capacity. The distance dc still measures the potential pressure, the above formula between pressure and time is still fulfilled, but the pressure in the feeding reservoir is less at the time R than at the time O'. The curve approaches O which now denotes some pressure intermediate between the original pressures of the two vessels. If we ourselves were within the receiving vessel, we would be unable to detect any difference between the case when the feeding reservoir is infinitely large and when it is finite and comparatively small. Only by virtue of the fact that we remain outside of the vessel, and apart from the entire system, do we feel that there is a difference.

Now any Hydraulic Control reservoir has been shown to be of mathematically infinite capacity, irrespective of its physical size; therefore, no matter what difference may exist between the physical dimensions of these reservoirs as feeders and the physical dimensions of a solution or gas tank as a receiver, the final pressures at O' is the same as the initial pressure at R. Thus the above considerations apply only to the case in which both vessels are of Volumetric Control.

When the receiving vessel is a solution

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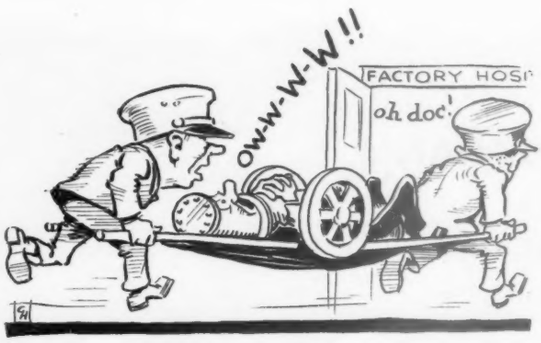
W. E. Adams.

W E Adams

General Supt. Production.



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tank insufficiently tall, or a gas tank equipped with a safety valve for blowing off, the tanks "overflow," and the feeding reservoir continues to produce fluid in accordance with its own control. At some instant t, then, the pressure curve of Figure 532 is cut by a vertical line td, and the remainder of the curve is not completed. The point O is approached in the time between R and t, but the curve never reaches there.

The Other Functions

534. In Figure 532 the axis for the pressure curve is shown as the horizontal line X. For the potential pressure dc we have the potential velocity of flow db. RO is an inclined straight line, for the relation between pressure and velocity in potential phase is

$$Ve = K P^{1/2}$$

We must hold in mind continually the fact that the system is behaving in a manner absolutely independent of the universe exterior to it; any pressure dc must have its corresponding velocity db. The formula for the velocity-time relation is

$$Ve = K T$$

The volume curve has the same equation as the pressure curve; namely,

$$Ve = K T^2.$$

The other relations, determined in the usual way, are

$$Ac = O,$$
$$E = K T^2,$$
and $$Po = K T^2,$$

all ordinates being measured downward from the X-axis.

The area between the axis and the velocity-time curve represents the volume which the receiving vessel will contain when equilibrium is established.

If we take the curves of Figure 442, replace their percentages by units, stretch them suitably, and invert them, we obtain the curves of Figure 532. In computing the position of the point O for the present curves, the method based upon the mathematical properties of the relative curves is impracticable for the reason that the measurements made in the field are not based upon distances from the X and Y axes, but upon distances related to the point R. Only after O is located can the relative curves be applied for incidental calculations.

Fortunately for us, pressure is not only the most convenient of functions to measure from the point of view of accuracy, but it also has the most convenient formula to handle as a mathematical equation. A straight line has a simpler equation, but it is to be noted that it has no vertex at O as do the higher power curves. A vertex is necessary; otherwise O cannot be calculated. By using the pressure curve we have an ordinary quadratic equation, with which we may compute the point at which its curve must make a turn for a new direction. This is the point O. (Article 419) Third and fourth power curves have their vertices, but the solutions of their equations are difficult.

Operator Fills a Reservoir

535. The formulas and curves describing the behavior of a reservoir when filled by the operator have points of interest in connection with our present

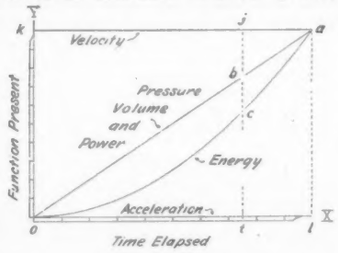

Figure 535

discussion. We may imagine a solution tank being filled by means of a pump, or a gas tank being filled by means of a compressor. Let us suppose that either pumping apparatus and its source of motive power are not overloaded in the process of filling; they are capable of working efficiently even against a load considerably in excess of the one encountered at the time when the tank is agreed to be "full." Thus we provide for a delivery into the tank at a constant velocity throughout the operation of filling. The velocity-time equation may be written at once:

$$Ve = K, \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

This is the straight horizontal line once more. By differentiation we have the acceleration-time relation:

$$Ac = O, \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

and by integration the volume-time relation is obtained:

$$Vo = K T, \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

the cumulative volume curve with its origin at a time denoting the beginning of the operation. The formula for the pressure-time relation must be similar to this; therefore

$$P = K T, \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The product of equations (3) and (4) is the energy-time relation:

$$E = K T^2, \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

and the product of equations (1) and (4), or the derivative of equation (5), is the power-time relation:

$$Po = K T, \quad \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

The scales for ordinates have been selected in such a manner that these curves appear as in Figure 535. Abscissas measured from left to right denote time elapsed.

The formulas are identical to those for constant rate extraction in Article 528. Figures 529 and 535 are so related that one, reversed in its left to right direction, becomes the other.

536. Except for the ultimate capacity of the apparatus, the curves of Figure 535 may be extended indefinitely to the right. If we attempt to exceed this capacity at some instant t, two possibilities arise:

(a) The pressure at the point b equals the strength of the materials of the apparatus at some point of severest strain; something breaks, and the curves are all cut by the vertical line tj.

(b) Assuming competent materials in the construction of the apparatus, the motive power behind the pumping apparatus can not exceed that denoted by the point b on the power curve. Filling proceeds on a curve of constant power; that is, the power-time curve becomes a straight horizontal line with the equation

$$Po = K, \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

By integration the energy-time relation is

$$E = K T, \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The square root of equation (2) expresses the pressure-time and volume-time relations:

$$P = K T^{1/2}, \quad \ldots\ldots\ldots (3)$$
and $$Vo = K T^{1/2}, \quad \ldots\ldots\ldots (4)$$

Now the velocity-time and acceleration-time relations are obtained by two successive differentiations of equation (4); therefore

$$Ve = K T^{1/2}, \quad \ldots\ldots\ldots (5)$$
and $$Ac = K T^{3/2}, \quad \ldots\ldots\ldots (6)$$

The curves for these formulas are shown in Figure 536.

Interpretation of the Curves

537. The six curves of Figure 536 are theoretically complete from zero time elapsed until a later time l. The power, pressure, volume, and energy curves are so drawn to scale that they meet conveniently at the point a. While these curves are parabolic, as usual, it is to be noted that the velocity and acceleration curves are now hyperbolic, and are asymptotic to the X and Y axes. This condition satisfies the mechanical requirements of the situation. Let us consider the two instants t=zero, and t=infiinity.

Power divided by pressure equals velocity. At the instant t=zero, power of finite value must be divided by pressure=zero; therefore velocity for the instant is infinite. For the instant t=infiinity, power of finite value must be divided by an infinite pressure; then, and then only, is velocity equal to zero.

In practice the curves will not begin at t=zero, nor end at t=infinity. In our present case, suppose a vessel were filled at a constant velocity as shown

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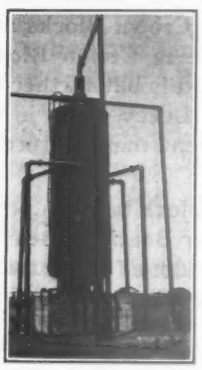

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in Figure 535. At the instant t the power has reached a value b, the capacity of the motive power driving the pumping apparatus. Now one period of time comes to an end, and another period is begun, wherein power is delivered at a constant rate as shown in Figure 536. Pressure has attained a value b which, if divided into the power, gives the velocity for the instant. The vertical cut in Figure 535 corresponds to some vertical cut in Figure 536. Except for acceleration which changes its value from zero to a finite amount, all the functions are of equal value precisely at the two cuts, although they are shown on different scales. We shall say that the instant t in the former figure is the same as the instant t_1 in the latter. The functions proceed on the paths to the right of t_1. How far can they reach in a given operation? In other words, where is the instant t_2, denoting a cut on the right which is farthest from t_1? Its location on the X-axis is determined by the part in the entire apparatus which first submits to a breaking strain.

Position of Equilibrium

538. Nature produces from, or fills, a reservoir in such a manner that all functions of flow follow a mathematical path toward the state of equilibrium. Whether we consider the primary function curves with abscissas representing time, or those between functions other than time, this statement holds true. The position of equilibrium is indicated by a mathematical point which serves as the vertex of parabolic curves. The only influence which the operator may exercise upon the vertex is to change its location.

The operator fills a reservoir in such a manner that all functions of flow follow a mathematical path away from the state of equilibrium. The position of equilibrium, now being left behind, also serves as the vertex of parabolic curves.

In the one case we in general deal with time remaining, whereas in the other, we deal with time elapsed.

Pressure-Velocity Relations

539. The delivery of fluid at a constant power expenditure is not in accordance with natural laws. A condition exists wherein a mechanism of limited capacity sets up primary function relations, both the fundamental and the derived, which seem quite artificial. That this is true with respect to the fundamental primary function relations is evident from the appearance of Figure 536. Let us consider the derived relations.

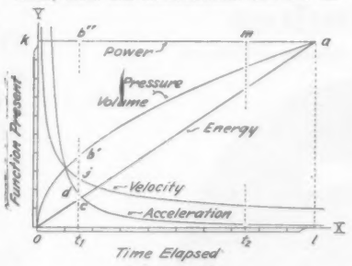


Figure 536

By the same method employed in Article 477, the derived primary function relations may be obtained from the equations of Article 536 by algebraically eliminating T between any two of them chosen to form a couplet. We thus determine the usual number of 15 equations. Let our present purpose be satisfied with the examination of pressure-velocity relations.

Rewrite equations (3) and (5) of Article 536:

$$P = K_1 T^{1/2},$$
$$\text{and } Ve = K_2 T^{-1/2}.$$

Multiply the two left members and the two right members, thus obtaining the equation

$$P\,Ve = K_1 K_2 = K$$

The value of the constant K is, of course, that of the constant power. Now this equation is in the form

$$xy = p,$$

the equation of the rectangular hyperbola. We therefore observe that the customary relations between pressure and velocity, expressed by Torricelli's Theorem, do not now prevail, although the reservoir being filled is certainly of Volumetric Control.

It will be recalled that with the V-shaped tank, the pyramidal or conical tank, the cylindrical tank with axis horizontal, and the spherical tank (Article 466), pressure-volume relations differed from the customary ones for this control, but pressure-velocity relations remained unchanged. Now we have cited a case where the pressure-volume relations are unchanged, and pressure-velocity relations differ from the customary ones. It is important to emphasize the fact these special conditions exist for reservoirs with which we are quite familiar. When we later determine an entire new set of equations for the behavior of reservoirs in Capillary Control, the fact that different relations exist between functions need not seem strange, for we have had, by that time, previous experience from which we may benefit.

Effects of Inertia

540. Fluid at rest tends to remain at rest, and fluid in motion tends to continue in motion in the same direction of flow. Pressure exerted upon the fluid overcomes these tendencies.

We open a valve which controls flow from the reservoir; fluid at rest takes on motion. If the valve is already partially open, and we open it further, fluid in slow motion takes on a more rapid motion. Conversely, when we close a valve, fluid in motion comes to rest, or takes on slower motion, according to a complete or partial closing of the valve, respectively. Either opening or closing of the valve is accompanied by an adjustment in conditions which required a short, yet finite, period of time for its consumation. For the entire range of possible reservoirs, such a period of time may be less than one minute or more than one day in duration. In consideration of this fact, we have consistently drawn parallel vertical lines relatively close in the figures representing conditions where alterations are made in the enternal friction head, the static pressure, or the constant back pressure, as the reservoir produces its fluid. (See figures for the three cases in Hydraulic and Volumetric Controls.)

During the period of adjustment we are particularly interested in the relations between velocity and residual pressure. Let us first consider the relation between each of these functions and time.

Changes occurring immediately after the opening of a valve are shown in Figure 532. Velocity and residual pressure start with zero value at the point R, and during the period of adjustment, no matter how short in actual duration, the former picks up according to the straight inclined line of the figure. In virtue of the dynamic relations between internal pressures of the reservoir, the residual pressure picks up according to the parabola RcO in the figure. The distance between R and O′ now denotes the duration of the period of adjustment.

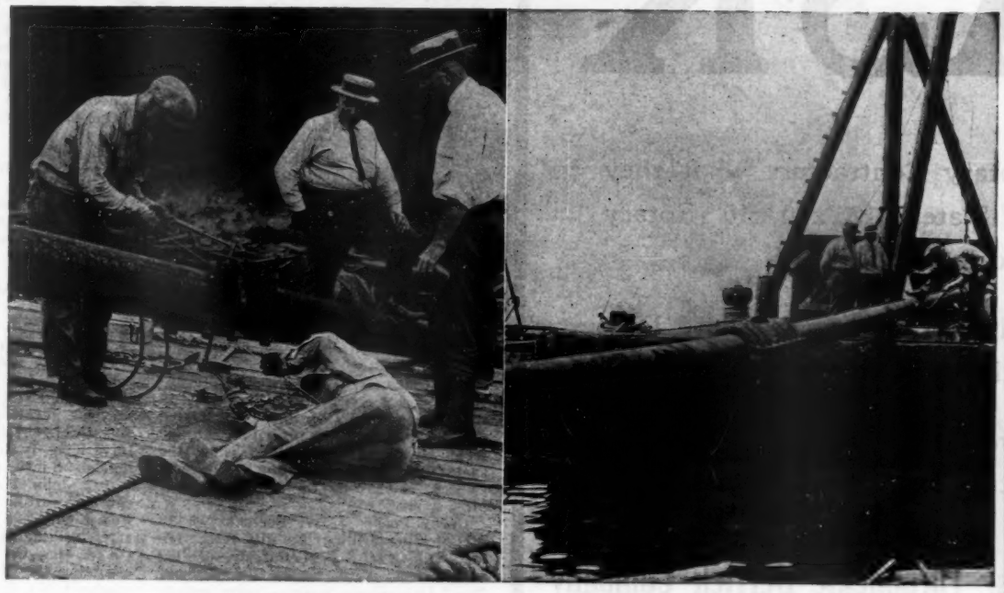
Changes occurring immediately after the closing of a valve are shown in Figure 442. Velocity and residual pressure decline during the period of adjustment according to the straight inclined line and parabola, respectively, of this figure. One hundred per cent on the X-axis now denotes the duration of the period of adjustment.

Partial changes in the setting of the valve merely results in a cut of the curves on the right—the vertices of the curves are approached, but not reached.

541. Now the relations between residual pressure and velocity in Figures 532 and 442 are those of Torricelli's Theorem; namely,

$$Ve = K\sqrt{R},$$

so that, if we are to test a given reservoir for potential pressure and potential velocity relations, we shall meet no difficulty in making our test directly between residual pressure and velocity, even though our test may be made during the very periods of adjustment forced upon the reservoir by our setting the valve at different positions. When we have



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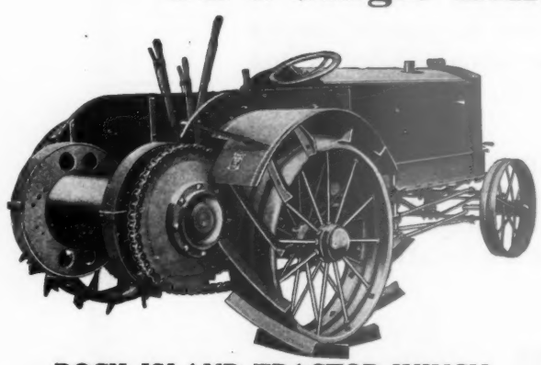

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KENTUCKY-TENNESSEE

(Continued from Page 46)

of Glasgow, is a 3-bbl. stripper at 140 feet below the shale.

Drilling Progress

Emery-Moore Pool: Fred Moore's No. 11 fee was cased at 130 feet; Star Oil Co.'s No. 5 Russell is down with a fishing job at 240 feet; Ziegler Brothers, Scott & Hice's No. 4 Bradford, drilling at 390 feet; Wood Oil Co.'s No. 3 Jewell, spudding; Keyes Petroleum Co.'s No. 2 Jump, shut down at 548 feet; No. 1 Rogers, drilling in shale and No. 1 Minnick, spudding; R. B. Tyler's No. 1 White, shut down with no oil show at 440 feet; T. L. Gorby's No. 1 Marshall, drilling at 356 feet.

Hall Baker and Beaver Creek Pools: Harrington & Norris Brothers' No. 13 R. E. Evans, rigging up; Consolidated Gas Co.'s No. 12 Depp, drilling at 220 feet; H. W. Duff, drilling below the shale; Wood Oil Co.'s No. 11 W. M. Church, is showing for a light pumper after a shot.

Gorby Pool: J. W. Porter's No. 13 McGlocklin, drilling at 210 feet; Hiland Oil Co.'s No. 11 Cassidy, drilling at 325 feet; L. J. Emery, Jr., & Sons' No. 2 Depp-Greer 36 acres, being tested; Depp & Greer's No. 19, drilling at 300 feet.

Warren County

C. P. Taneyhill's initial venture on the Worden, in the Gillespie Pool of southwestern Warren County, extended production several locations to the west of the Bryant farm when it pumped 5 bbls. from a total depth of 1,208 feet. The shale was from 990 to 1,076 feet. Two sands were encountered, the first at 50 feet below the shale was dry and the second sand, where oil was found, was topped at 1,175 feet and drilled through at 1,189 feet.

In the Davenport Pool, west of Bowling Green, the Lincoln Oil Producing Co. drilled No. 1 Davis several feet deeper to a total depth of 1,328 feet, where it was shot with 60 quarts of nitro. After the well was cleaned out and put on the jack it started with a flush of 20 bbls.

The Davenport Pool is the only section of Warren County where any great amount of activity is being displayed. A check on that district shows that 12 wells are being drilled: Cadet Oil & Gas Co.'s No. 24 Biddle, was fishing for tools at 1,300 feet; Foster and others' No. 8 Stone, was in the shallow sand; Al F. Hayne's No. 1 Keller, shut down with a fishing job; New Domain's No. 10 Bessie Snell, drilling at 400 feet; T. A. Sheridan's Nos. 9 and 10 Georgianna Davenport, drilling at 450 and 700 feet, respectively; Onsel-Harnahan Oil Co.'s No. 9 Brownfield, drilling in the shale; Lincoln Oil Producing Co.'s No. 3 Cal Snell, drilling at 790 feet; Wood Oil Co.'s No. 23 Davenport, on top of the deep pay; same concern's No. 12 Grimes, progressing at 980 feet; Wilson and others' No. 3 Herb. Jenkins, drilling at 209 feet.

In the Richpond district, near Woodburn, Roy Hogan brought in a 15-bbl. beginner on the Ford farm at a total depth of 470 feet in the Mississippian lime. This is the seventh producer on this tract. No. 8 is being started. In this same area, the Illinois-Kentucky Oil Syndicate's No. 7 Vance is in the shallow pay; Moore & White's No. 9 Potter, is being cleaned out after a shot; Wiles and associates' No. 4 Shannon, is being rigged up.

No completions were made in Allen County during the week and no wells started. A complete shut down is noted in all sections of this shallow field, once heralded as the "best shallow oil field in the world."

Owensboro Field

More interest is being manifested in the Owensboro district, comprising parts of Hancock, Ohio and Daviess Counties, than in any other section of the State. Many companies that heretofore never have had their scouts in the field are now represented, and considerable acreage is being leased. Some acreage has changed hands at prices ranging from $3 to $35. Several concerns have tried to purchase production, but it seems as though the operator is well pleased with what he has and is willing to develop it himself.

Due to the poor conditions of the roads only two wells were finished. In the Hurricane Pool, the Panther Creek Oil Co. secured a 10-bl. pumper in No. 10 F. V. Miller in the shallow Jett sand. It is 400 feet south of No. 8. In advance of the Collier Station Pool, Pirtle & Smith's second trial on the Howard tract is good for about 1 bbl. in the Jett. This lease will probably be abandoned as both wells so far drilled have not shown enough production to warrant further drilling.

Drilling Operations

Leonard & Weatherholt's No. 1 J. Miller, at Dermott, drilling at 1,075 feet; Petroleum Extraction Co.'s No. 1 Maude Stevens, at Morgan, was progressing at 800 feet; Creek Drilling Co.'s No. 5 Dave King, is shut down at 60 feet waiting on 8-inch pipe; Foster Oil Co.'s No. 1 John Keith, south of Antwerp church, waiting on pipe at 750 feet; Foster Oil Co.'s No. 1 R. B. Power 120 acres, drilling at 450 feet; White Plains Oil & Gas Co.'s No. 1 Allen Brown, adjoining the Midkiff, rigging up; same concern's No. 1 John Ward, in the Midkiff Pool, drilling at 110 feet; Pennsylvania-Indiana Oil Syndicate's No. 1 W. P. Griffith 260 acres, is spudding; Chicago Petroleum Syndicate's No. 4 Ira Crowe 20 acres, rigging up; C. A. Leeper's No. 5 J. S. Collier 13 acres, rigging up; Bert Thompson's No. 2 Gabbart, at Pellville, spudding at 80 feet; Pearl Steven's No. 1 Guy Barlow 50 acres, at Pellville, drilling at 432 feet; Kentucky Oil Co. is moving a rig to drill a well on the John Burdette, west of the C. E. Morrison farm; Fred Carson's No. 6 Abe Howe, spudding at 92 feet; White & Nicklin's No. 7 O. T. Burdette, is shut down with a fishing job at 650 feet.

Cumberland County

Nothing of importance is reported from the Cumberland and Monroe County Field, but several wells are nearing the pay sands that should be brought in early next week. At Renox Creek, Whitlatch and others got a duster in the second Sunnybrook sand in No. 4 on the Strange farm, while a test on the Hicks tract at Brush Creek was abandoned in the shallow pays.

The Alta Oil Co.'s No. 1 O. Cheatham, on the west fork of Crocus Creek, is still shut down on top of the first Sunnybrook for lack of storage room. In this same area, Weddle and associates are starting up on the D. Baker farm.

At Kettle Creek, the recent completion of W. S. Raydure on the Hiram Wells farm is a gasser in the Pencil Cave sand.

Eastern Division

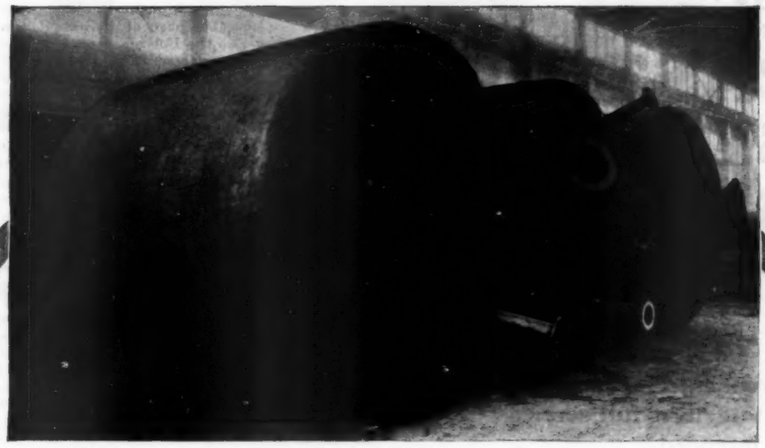
Production in the eastern end of the Blue Grass State was 111 bbls. daily during the week from a total of 13 completions, of which 9 are producers, 2 are gassers and the remaining 2 were dusters. The best completion was chalked up to Hudson & Collins in District No. 29 of the South Weir Field of Johnson and Magoffin Counties. It is No. 3 on the Oscar Wheeler tract estimated at 20 bbls. from a total depth of 1,012 feet.

In District No. 25, of the South Weir Field, the Petroleum Exploration Co. finished No. 40 Abe Caudill for a 10-bbl. pumper. In District No. 31 J. H. Arnett's No. 13 fee is pumping 20 bbls. from the Weir formation.

North Weir Field

The North Weir Field, comprising parts of Lawrence and Johnson Coun-

(Continued on Page 102)



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MINERALS DIVISION IS PLANNING PROGRAM TO AID OIL EXPORTERS

By Charles E. Kern

WASHINGTON, D. C., Dec. 14.—The petroleum section of the Mineral Division of the Department of Commerce is now in a state of transition brought about by having a considerable part of its functions turned over to the Bureau of Mines, which has been transferred from the Department of the Interior to the Department of Commerce. This means that the oil industry has a particular opportunity at this time to influence the enlargement and direction of the work of this petroleum section, which hereafter will specialize on the purely foreign commercial aspect of the petroleum trade.

This transfer of many of the activities of the petroleum section probably will be completed by January 1, 1926, when the personnel of the petroleum section will be largely reduced and will devote itself to the promotion of foreign trade in petroleum and its products. In fact, all of the work relating to minerals will be turned over to the Bureau of Mines except foreign commercial activities. During the last year the petroleum section has been primarily engaged in the promotion of foreign trade in petroleum and its products to which the exclusive attention hereafter will be given, with only such incidental studies as will be necessary to assist in presenting to American exporters information concerning customs duties and conditions governing importations into foreign countries together with advice relating to obstacles in respect to competition to be encountered and ways to meet it.

In this connection, the section has prepared and has published during the last year a study entitled "World's Trade in Gasoline." The publication of this report was to point out the principal markets for American gasoline, together with a description of the general conditions affecting the marketing of these products in the principal countries of the world. The production of gasoline in other countries was explained and statistical tables were included to show the general trend of the gasoline trade throughout the world. This report will be a model for other reports to be prepared by the petroleum section and the first ones to come out will relate to kerosene, lubricating oil, and fuel oil, and probably they will be issued in the order here named.

Exporters Asked to Aid

This suggestion should call for ideas as to the details to be covered from exporters of these products. Many exporters show by the letters they write to the petroleum section that they are at a loss to understand what, if any, peculiarities in these products are demanded by various countries. The universality of oil and its products has caused a strong tendency toward standardization of quality, but still there are local prejudices in various consuming countries that must be taken into consideration.

Even more difficult are the questions relating to credit, commercial law, import duties and customhouse restrictions that are well enough known by the larger oil companies but are very vexatious to any new entrant into the export field. There are methods of entering a foreign market by an unknown company, a knowledge of which in advance proves of great value and without which a consignment of oil may spell loss instead of profit. One of the elements of such new trade is the necessity to get in touch with suitable agents which not only requires the selection of agents of sufficient reliability, but who have a standing in their communities that may be of service in disposing of products. The list of such agents in all departments of the Department of Commerce is one of the greatest assets that an inexperienced exporter can have. The larger companies, of course, have their own men on the ground, so that when it is necessary to have dealings with native agents they are able to bring to bear their personal judgment, which is an advantage that the newcomer in the field is deprived of.

The petroleum section not only has this practical business function to deal with but it is called upon frequently for various information, more or less of an academic nature, to supply the needs of economists and others in the colleges and universities of the country. Frequently, individual firms call upon them for statistical services which they themselves outline, the information for which services is gathered from a variety of sources, largely from the reports of consuls, but also from foreign journals and newspapers that make a specialty of reporting oil statistics.

This year, for the first time, this section has been keeping a current statistical record of foreign crude oil production, and during the coming year that function will be developed to as high a degree of efficiency as is possible. The special bulletins resulting from this line of work are very largely made up from the reports of United States consuls. As the work now progresses these consuls will be urged to specialize more particularly upon information of this kind, so that before the year is half over, it is believed an efficiency never before realized in this class of statistics will be attained.

The demand being made upon the oil section and by various other functionaries of the Government for foreign information emphasizes the increased activity that is needed on the part of United States consuls abroad. The time has come when these consuls must prepare themselves to be experts on the numerous questions with which they are called upon to deal, because being the original source of information so far as our Government is concerned, if they do not respond, the whole scheme of properly informing exporters must fall to the ground.

Imports and Exports

The petroleum section also collects and makes available for the public special statistical information on our own imports and exports so that they are able to supply the oil companies with that sort of assistance. They are endeavoring to build up a service relating to oil prices abroad that will not only be comprehensive and accurate but will be, so far as possible, up to the minute. One of the great difficulties of Government activity in respect to furnishing information has always been the delay in getting it in the hands of those who need it, so that when it does come out its usefulness is minimized. This pertains especially to information on prices. It is quite likely if this petroleum section achieves the success that Secretary Hoover would like to give it, that radio must be utilized for the transmission of dispatches and persons concerned in this information will be enabled to place themselves in a way to receive telegraphic advice on the particular price information they are seeking.

This is an ambitious program which neither the appropriation nor the personnel of the petroleum section as it will function on January 1 could possibly handle, but it is within the power of the oil industry, if it really wants this sort of assistance, to use its influence to provide the sinews of war by which its interests may be defended and promoted. The nucleus for this work exists under the present head of the petroleum section, Homer Fox, who has occupied that position just a little over two years. It has been made quite evident that in addition to gasoline the prices that prevail in foreign markets for kerosene, lubricating and fuel oils are of vast interest. These products are receiving more attention by the section than ever before. Such information as exists on this subject is kept in the files of the section and is available for any one who wishes to obtain it.

In addition to this program of activity, the petroleum section is constantly being called upon to assist other Government bureaus that may be engaged in a study of petroleum questions. For instance, the subject of oil pollution of navigable water, which is being given a great deal of consideration by the Bu-

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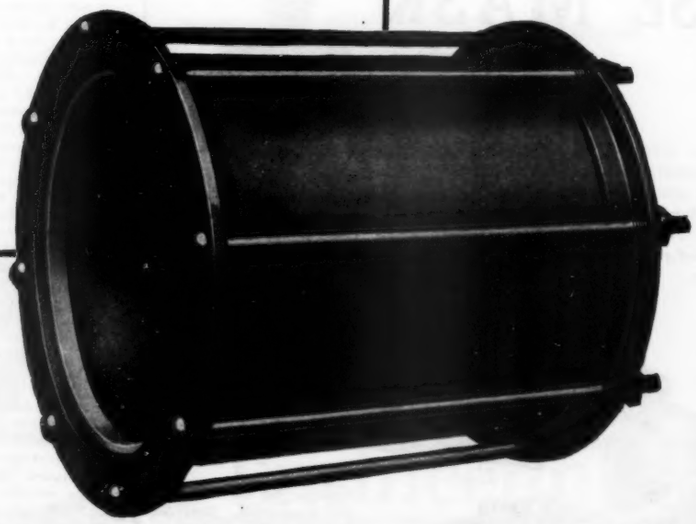

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Dear Friends:

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There is something in scripture about what a hard time a Camel would have to get through a Nye of a needle, but surely a Ford could. It would have been a swell Christmas present, because I don't know anything like a Ford to make a man forget his other troubles.

However, even if I can't send you a Ford I can send you my best wishes for a Merry Christmas for you and yours. If good wishes won't make you happy, then nothing will.

Of course, good wishes aren't everything. I remember when I first started in business that was about all I got,—good wishes. I used to wish that some guy would bawl me out and actually give me an order. They do it now, all right, but when I needed both the order and the bawling out, I got nothing but good wishes, (not saying, of course, that I don't need them both right now).

But, as far as good wishes go, I wish you a Merry Christmas. We give some little old shop 312 or more of our days and 364 of our nights during each year. Now let us have a day for ourselves and our folks, and let that day be Christmas. Whether business is good or bad, whether you use Nye dies or the other kind, let us forget it all and have a Merry Christmas with our friends and our folks. I can't be one of your folks perhaps, but anyway on Christmas day count me in as

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reau of Standards, the Bureau of Mines and the State Department, is one upon which the files of the petroleum section become of value. Both in England and the United States oil pollution problems are receiving a great deal of public attention, and as they touch the interests of some of the fashionable water resorts they affect the interests of individuals who are able to make their influence felt.

New Activity Planned

The last two or three months have not been as active in the work pursued by the petroleum section as would have been the case had not great uncertainty in respect to the reorganization of the Bureau of Mines made it doubtful upon just what lines of usefulness this section would continue to pursue. There has been a desire to limit the activities of the section to subjects that will continue to be given attention after January 1. After that date, however, there will be a specialization and a unification of these activities that are likely to greatly benefit exporters of petroleum and its products.

Beeby Thompson's New Book Covers Field Development

Beeby Thompson, eminent British petroleum engineer and author, has written another work on oil, "Oil Field Exploration and Development," in two volumes. It is published by Crosby Lockwood & Son, London, Eng. Mr. Thompson is the author of "Oil Fields of Russia," "Petroleum Mining," "Oil Field Development," and "Emergency Water Supplies."

The Oil News, London, in a short review on Mr. Thompson's latest work says:

"The first volume is mainly devoted, as may be imagined, to oil field prospecting problems and to the phenomena associated with occurrence and exploitation. The first chapter, on 'Distribution of Petroleum,' is notable because so far as we are aware it contains the only published attempt to relate the distribution of oil to the position of the great geosynclines. This task is an intricate one, and for simplicity's sake the map given by the author deals only with the geosynclinal system of Mesozoic and Tertiary times, only the oil fields of this period being shown and those of the Palaeozoic period being omitted. On Haug's outline of the zones have been plotted the main producing and prospective oil fields; and the claim of the author is well borne out that 'from this diagram it will be seen at once that there is certainly a very close relationship between the geosynclines and the areas rich in petroleum. With the exception of the oil fields of the southern United States and those of Borneo, both of which lie close to the geosynclinal zones, it may be said that no important field has been developed outside them, in spite of the large areas of sedimentary rocks of similar age which are developed far from these zones.' As illustrations, he mentions the Cretaceous and Tertiary strata of the west coast of Africa, which are petroliferous but have never yielded as yet commercial quantities of oil; and the great deposits of similar age in Australia and China, where considerable prospecting has been done without success.

Vertical Distribution of Oil

"At the same time, Mr. Thompson is careful to point out that although there is an undoubted relationship between geosynclines and oil occurrence, yet it is much more difficult to investigate such relationship within the geosyncline without much fuller information and much more detailed maps.

"As every reader is aware, besides the distribution of oil by area, which we may call its regional distribution, there is its distribution in a vertical direction, for petroleum occurs in many strata greatly varying both in depth and in geological age. Hence one of the most interesting pages in the book is that which contains a table showing the geological age of the world's oil fields. This table, in which the oil and gas fields are indicated by circles and the age of the relative strata is indicated by the placing of these circles in vertical lines, affords striking ocular demonstration that almost all the oil fields of the world are in the Tertiary or the upper portion of the Mesozoic. The great exception is, of course, the eastern fields of the United States, the similar evidence from eastern Canada being really a continuation of that from south of the boundary. Leaving out the areas we have just indicated, the solitary Palaeozoic oil-bearing strata are the Carboniferous in the Mid-Continent fields of the United States, and the Devonian in western Canada. Mr. Thompson's way of presenting these facts is a happy one and will be greatly appreciated by those who have to explain them to others.

"It is significant that the chapter entitled 'Formation of Oil Fields' begins with a section on the migration of oil. In discussing this, Mr. Beeby Thompson is well known as a high authority; and if we say that he proceeds to treat of concentration and retention, and of the causes of oil field pressures, the reader will agree that he does not shirk this much discussed problem either. Oil field structures are described with the aid of diagrams, many of which are new. A fascinating chapter is that on oil indications and their significance, closely followed by a discussion of phenomena associated with oil field development. A glance—although a comprehensive one—is next taken at the geology of the various groups of oil fields—American, European, Asiatic, and so forth; and in each case an adequate and distinctly printed map aids the reader to follow the author. With a chapter on the properties and treatment of petroleum, this remarkable volume ends, the remarks on distillation and refinery methods including a section on cracking."

KENTUCKY-TENNESSEE

(Continued from Page 98)

ties, had five good completions. Four are credited to the Union Gas & Oil Co. and one to the Garrison and Townsend interests.

In District No. 22, the Union made a 15-bbl. strike in No. 38 J. J. Gambill, and got a 5-bbl. pumper in No. 11 L. H. Skaggs in the same district. This same concern's No. 9 R. C. Miller, District No. 22, and No. 8 C. E. Frailey, District No. 33, were reported at 4 and 15 bbls., respectively, from the Weir formation.

Garrison & Townsend's No. 20 C. K. Dobyne, in District No. 22, is making 12 bbls. on the jack from the Weir at an approximate depth of 850 feet.

Other Completions

In Waye County, Spradlin & Marsh's No. 12 Bridgman, District No. 13, made 10 bbls. from the Beaver sand at about 600 feet. C. M. Work's No. 2 G. C. Dodson, District No. 5, is a dry hole in the Beaver sand.

Near Inez, in Martin County, the Big Derby Oil & Gas Co. got a gasser in its No. 2 Al Carter, and Leonard and Ralph's No. 5 on the Mayo properties is reported as a small gasser.

According to reports, the second test made by Upchurch Brothers, 4 miles from McKee in Jackson County, is a duster in the Corniferous sand.

October Production

Kentucky received $1,166.07 during October from the 1 per cent production tax on crude oil, according to reports received by the State Tax Commission. The total production amounted to 543,-497 bbls., valued at $1,166,079.13.

Lee County led with a production of 139,860 bbls. Johnson County's total was 85,634; Magoffin, 70,502; Lawrence, 59,102, and Warren, 36,915.

MORE GASOLINE ENGINES

The new gasoline engines being used on the Baltimore & Ohio passenger trains on the Lexington-Harrisburg branch are proving to be such good labor savers that it is understood the company contemplates using similar motive power for passenger trains on the Harper's Ferry-Strassburg section and also the Hagerstown and Frederick branches.

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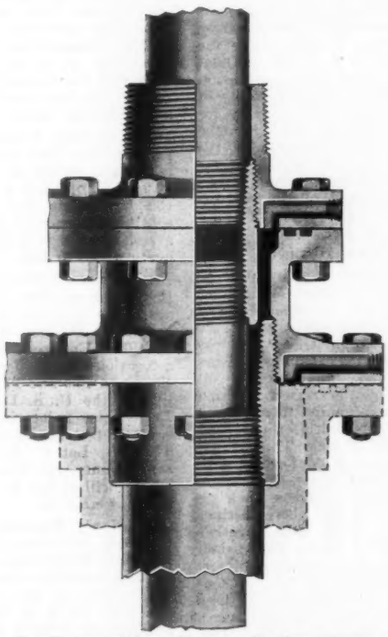
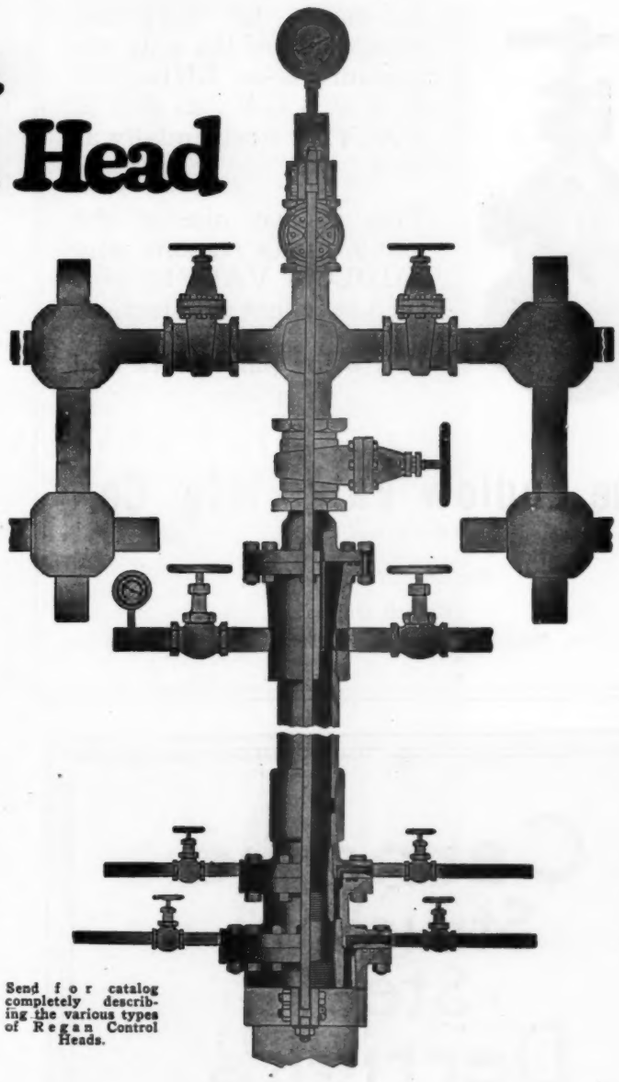


Detail view of Santa Fe type, showing arrangement of flanges. Note the compactness. Least cellar space required.



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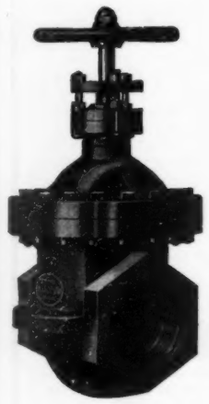

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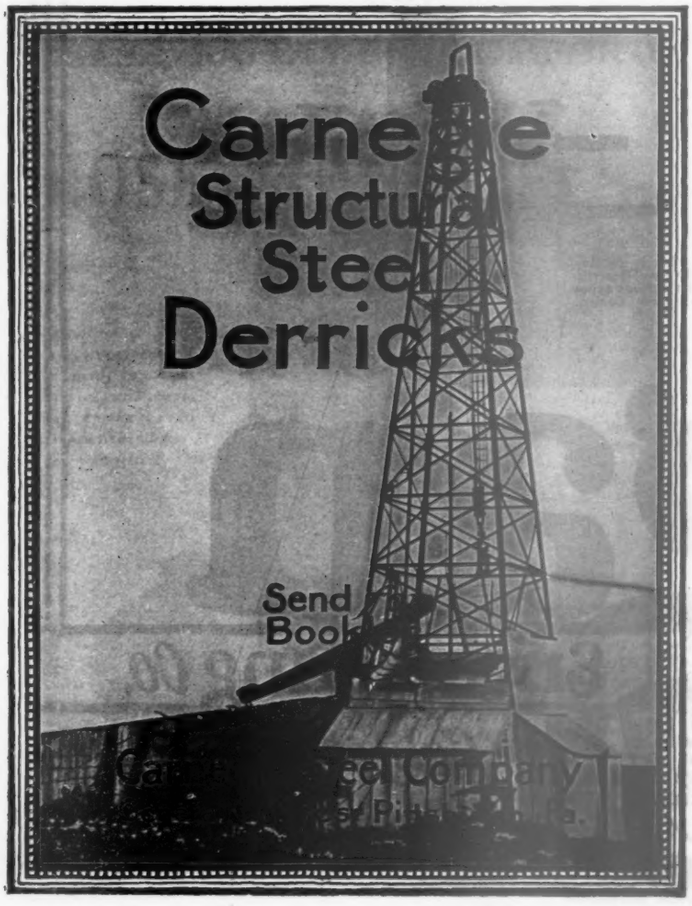

OIL MAY EXIST IN SOUTHEAST OKLAHOMA

(Continued from Page 51)

be located in adjoining sections and yet separated by water-bearing sand. It seems to me that this cannot be satisfactorily explained by the amount of metamorphism which the sand has experienced at the various points, but the explanation must rather lie in the conditions surrounding the deposition of the sand, and primarily the source beds, either above or below it.

"The carbon ratio contours for Oklahoma follow, in a general way, the division line between oil and gas bearing areas and therefore seem to indicate that the carbon ratio theory is correct in its application to this State. I believe, however, that this apparent relationship is due to depositional conditions rather than to metamorphism as the theory would indicate.

"The axis of the Ouachita Mountain mass is roughly parallel to that of the geo-syncline in which its sediments were deposited and also to the contour lines showing the thickness of continental sediments making up its main body. Furthermore, the shore lines of that time were roughly parallel to the present Ouachita axis and lines of folding and there is a parallelism between the above and the carbon ratio contours. All of this is pointed out in detail in order to show that the carbon ratio contours have the same general strike in this part of Oklahoma as do those which give the division between marine and non-marine beds of the same age. In other words, both are roughly parallel and the fact that the carbon ratio contours coincide with the division line between areas bearing mainly oil and those producing mainly gas is not necessarily proof of the correctness of the carbon ratio theory because of this parallelism.

Dividing Line Distinct

"Among other points worthy of consideration in this connection is the fact that the dividing line between oil and gas territory is quite distinct, and there is little or no gradation. One would expect to find increasing amounts of gas and lesser and lesser quantities of oil in the direction of the region of high metamorphism until finally there would be only a residue (asphaltic or paraffin) and large amounts of gas. This gradation should take place in conformity with the increasing carbon ratio, and there should not be any conditions such as those previously outlined, where distinct oil and gas pools occur close together in the same sand, far within the carbon ratio contour enclosing distinctly oil territory. The existing facts, on the contrary, point to an explanation of these phenomena in conformity with changes in depositional conditions.

"Another discrepancy in reasoning based on the carbon ratio theory is that a low grade oil is sometimes accounted for on the ground that it has been caused by greater metamorphism, while an unusually high gravity crude is likewise often explained in the same way. Escape of the more volatile products from an oil through faults does undoubtedly happen in regions of high folding. If there is any refinery process, experimental or otherwise, by which crude oil can be converted into methane gas without leaving any residue, the writer is unaware of it.

"If greater heat and pressure cause oil to change in character, we should find a general increase or decrease in gravity with depth in any particular locality. We should also find an increase or decrease in the gravity of oil in any sand as we follow it down the regional dip from the outcrop. Neither of these characteristics seems to be found in actual practice, but rather we find a variation from place to place which might be caused by different phases of deposition and source.

"In a recent bulletin published by the Illinois Geological Survey, a map showing the carbon ratio contours of the State was included. The increased carbon ratio over the La Salle anticline, on which the principal oil fields of the State lie, was marked. In the western part of the State, however, where the carbon ratio contours indicate that less metamorphism has occurred, there are several gas fields and less oil than on the La Salle anticline.

"In conclusion, it can be said that if the above interpretations are correct, a large portion of southeastern Oklahoma will be placed in the class of possible producing territory. It must be remembered, of course, that on account of the great thickening of the upper series, the carbonaceous marine beds with accompanying reservoir rocks probably lie at depths within reach of the drill only on some of the major anticlines. These major uplifts, however, are well worthy of deep tests."

CENTRAL WEST

(Continued from Page 50)

pany makes an excellent showing. It is No. 2, located 300 feet from the south line and 900 feet from the west line of the Frank Miller 40 acres, Section 21, Wooster Township, Wayne County, and showed 75 bbls. from the deep Clinton lime. This company's No. 5 well, 800 feet from the south line and 300 feet from the east line of the F. A. Richwine 84 acres, Section 8, East Union Township, same county, is credited with 20 bbls. from the same formation.

In Liverpool Township, Medina County, the Ohio Fuel Gas Co. made an excellent gas strike at its test on the K. and J. Sezanowicisy farm of 7 acres, Section 3. In the same section, the East Ohio Gas Co. brought in an average gas well in the southwest corner of the Ammie Stroskopf farm.

In Columbia Township, Lorain County, the Ohio Fuel Gas Co.'s test in the northwest corner of the John Langbon 26 acres, Lot 13, is a fair gas well, while the East Ohio Gas Co.'s test on the southwest corner of the J. J. Squires 56 acres, Lot 34, is a lighter gas well at a depth of 2,770 feet.

In Monroe Township, Holmes County, the Arkansas Fuel Oil Co. made a big gas strike at a test in the northwest corner of the William Miller 154 acres, Lot 11. The Empire Gas & Fuel Co. made a location for No. 5 well, 1,100 feet from the north line and 275 feet from the east line of the U. S. Davenport 140 acres, Lot 5, also a location for a test in the southwest corner of the George W. Hana 44 acres, Lot 6. In Prairie Township, same county, the Pure Oil Co. has started the drill at No. 2 on the W. H. Miller farm, Section 18.

In Hardy Township, Holmes County, the East Ohio Gas Co.'s No. 3 on the Harriett McCullough 85 acres, Section 30, is reported showing for a 30-bbl. well. Same company has started the drill at No. 5 on the J. R. Forgy 60 acres, Section 9. In Kilbuck Township, the Ohio Oil Co. is drilling a second test on the Albert W. Schoonover 40 acres, Lot 19. In Paint Township, same county, the Ohio Fuel Gas Co. has a good gas well at a test on the Isaac Y. Miller 160 acres, Section 5.

In Carthage Township, Athens County, the Logan Gas Co. has a nice gas well at a second test on the J. and M. Schuller 83 acres, Section 26, and C. A. Cody a fair gas well at a test on the Lonna T. Runyon 50 acres, Section 36. Walden and others are drilling a test on the Jones heirs' 140 acres, Section 8. In Rone Township, the Logan Gas Co. is drilling No. 1 on the Warren and M. Giffin 268 acres, Section 15.

Offside Completions

In Washington Township, Hocking County, Bell & Schaal's test on the Beatty & Shade farm, is a fair gas well.

In Athens Township, Athens County, Clark and others have a light gas well at a test on the Ray Radford farm.

In York Township, Morgan County, the Carter Oil Co. has a light gas well at a test on the Elizabeth Floyd farm.

In Barlow Township, Washington County, the Muskingum Gas Co.'s No. 1 William Kusch farm, is only a small gasser. Blauser & Dent's No. 1 C. Robinson farm, same township, is a fair gas well, while the Muskingum Gas Co.'s No. 1 Jim Huff farm, is only a small gas well.

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Fig. No. 124

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Ontario's Last Toll Road Recalls Early Boom Days of Oil

By Victor Lauriston

CHATHAM, Ont., Dec. 12.—The decision of the shareholders of the Sarnia-Florence Plank Road Co. recently to turn over their road to the county of Lambton eliminates the last toll-road in the Province of Ontario. The passing of this company after an existence of 62 years recalls a remarkable epoch in the history of road building.

The Sarnia-Florence Plank Road Co. was formed in 1863. It was one of the products of the oil boom which brought the town of Petrolia into existence, where a few years before had been little more than trackless swamp and forest. To get out the oil in those early days, good roads were necessary; but as a result of heavy teaming, the rough trails became impassable, even in the best of weather.

The same difficulty had been experienced in other parts of southwestern Ontario. Stone was difficult to obtain for road building purposes. There was, however, an abundance of hardwood, oak, elm and walnut, which in those days was practically valueless. Out of these conditions sprang the widespread "plank road boom" which, 75 years ago, resulted in the floating of numerous plank road companies, which sougth to provide passable highways by surfacing the mud roads with heavy oak planks.

In Kent County as early as 1851 the Chatham, Pond Eau & St. Clair Plank Co. and the Chatham & Camden Plank Road companies were organized. Local men subscribed for stock and substantial bonuses were granted by the municipalities concerned; in addition to which the companies enjoyed the privilege of collecting tools from actual traffic.

Several such companies, including the Sarnia-Florence Plank Road Co. were formed in Lambton following the Petrolia boom. The fine plank roads, despite the incidental tolls, were for some years the favored highways for all traffic; and in particular the drive from Petrolia to Sarnia and back behind a spanking team was a favorite outing for the "sheiks" of oil boom days.

So long as the roads were new, the plank road companies prospered; but after a few years' time maintenance costs made the roads unprofitable or lack of maintenance made them unpopular. It is said of one road that men teaming oil from Petrolia were accustomed to carry a hammer and a supply of spikes to nail down the heavy oak planks in places where they had "sprung."

Eventually the plank feature was discarded, and some of the roads were kept fairly passable with stone and gravel, while other frankly reverted to a state of nature. One by one the plank road companies gave up the ghost, and the toll roads were handed back to the municipalities.

The Sarnia-Florence Plank Road Co. kept throughout probably the best road of the lot. Although it has been in continuous existence since 1863, no dividends were ever paid to the shareholders, though a few officers drew small salaries. The assets to show for 62 years of service comprise $6,700 in cash, two tool houses, two gravel pits and some road machinery. It is expected that the formal opening of the road under municipal auspices will be marked with notable ceremonies.

GROWING DEMAND FOR OIL AND GAS LEASES

OKLAHOMA CITY, Okla., Dec. 12.—The State's income from oil and gas bonuses and royalties during the last five years has averaged $1,000,000 a year, according to W. A. Durant, secretary to the Commissioners of the Land Office. The money is placed to the credit of the farm-loan fund.

Applications for oil and gas leases to State lands are growing in number, the commission's records show, and it is predicted that next year's demands for leases will be far in excess of any previous year recently. Trends of wildcatting northwest from Enid and north from the Panhandle Pool of Texas lie in the direction of counties of western Oklahoma, where the State owns several hundred thousand acres of land. Inquiries of the commission indicate that Cimarron, Texas and Beaver Counties, which constitute the Oklahoma panhandle, are likely to receive big wildcatting plays next year.

AUTOMOBILE OUTPUT REACHES NEW RECORD

A new November record was established by the automobile industry when 379,300 cars and trucks were manufactured, according to National Automobile Chamber of Commerce.

The total for 11 months is 3,997,954, exceeding the record for this period in 1923 by 5.6 per cent. The total is 16½ per cent higher than the similar period in 1924, which was the second largest year in the business. November was 63 per cent over a year ago. The outstanding reason for this growth has been the fact that the prices of vehicles are the lowest that have ever obtained.

Marked manufacturing economies have been made this season, particularly in closed bodies, with the result that better cars have been offered for less money than ever before.

The following table compares output with last year:

	1925	1924
January	241,062	324,565
February	287,213	376,370
March	377,253	393,489
April	439,124	384,353
May	426,017	321,638
June	402,848	254,146
July	400,337	270,935
August	259,581	283,879
September	332,781	296,488
October	452,392	293,356
November	379,300	232,248
Total	3,997,954	3,430,467

MEXICO WILL LIMIT WITHDRAWAL OF OIL

The petroleum agency of the Mexican Department of Industry, Commerce and Labor has released a decree covering the amount of oil which companies will hereafter be permitted to withdraw from wells, especially those which are competitive. The decree is intended to stop wide-open withdrawals which have brought in salt water in many instances and ruined pools.

The circular states:

"First, when it comes to the knowledge of the Secretary that an area is being intensely exploited by one or more companies, the Department of Petroleum will call a meeting of representatives of the companies with the object of reaching an agreement as to the manner in which exploitation shall be made, with a view of benefiting both the companies and the nation by rational exploitation.

"Second, if in the meeting referred to the parties cannot arrive at a satisfactory agreement, the Department of Petroleum shall order that the companies reduce the amount that may be extracted from each well in the proportion that is deemed advisable."

The amount of oil to be taken follows: Production up to 1,000 bbls., 100 per cent; 1,000 to 5,000 bbls., 65 per cent; 5,000 to 10,000 bbls., 60 per cent; 10,000 to 20,000 bbls., 50 per cent; over 20,000 bbls., 40 per cent.

CALIFORNIA NO MENACE

Sidney Keoughan, president of the Continental Oil Co., says California is no longer a menace to the oil industry, either from a production or refining viewpoint. He added that reports of 100,000,000 bbls. of crude in storage and vast amount of gasoline waiting to be moved to Eastern markets are gross exaggerations. Mr. Keoughan asserted that no more than 9,000,000 bbls. of gasoline, much unfinished and not marketable, is in storage on the Pacific Coast and he expressed the opinion that California stored oil won't yield 10 per cent of gasoline even after cracking.

CANADIAN FIELDS

(Continued from Page 38)

bbls. a day. An offset test will be drilled, the work being in charge of David Credille, who drilled the early British Petroleum's producers in this field and first introduced the rotary system into Alberta.

In the Medicine Hat Field, Roth No. 1 deep test being drilled at Police Point, Medicine Hat, set 6⅝-inch casing at 2,460 feet. At that depth the drill has passed through the Bow Island gas sand without developing any commercial production. At 2,525 feet a flow of artesian water, estimated at 2,500 bbls. a day, was struck; the water appeared to be of a "mineral" quality. Efforts are being made to shut off the water and drill deeper.

In Saskatchewan, the Big Six Oil Co., with head office at Saskatoon, has been incorporated under Dominion charter with $250,000 capitalization. It is reported that this company will undertake development of an oil prospect recently discovered at North Battleford. The propect, which was examined by Prof. W. G. Worcester of the University of Saskatchewan, shows the usual surface indications, with bubbles of gas arising from beneath the water of the Saskatchewan River, and when they break at the surface spreading an iridiscent film of oil for a considerable distance. Very little is known of structural conditions in the vicinity, which has been so far practically untested; so that the value of the prospect can be determined only by actual drilling. Saskatoon and North Battleford capital is interested in the prospective test; and it is probable that at least one well will be drilled.

Natural Gas

As a result of the "consumer ownership" campaign carried on the latter part of November by the Canadian Western Natural Gas, Light, Heat & Power Co., of Calgary, some 800 individuals in Calgary, Lethbridge and other communities supplied by the company acquired stock in the company. It is reported that more than $250,000 of stock has been purchased by customers. This is the second campaign of the kind carried on by the company, the first having taken place about a year ago.

CALIFORNIA FIELDS

(Continued from Page 44)

of this zone will, by mutual consent, be held up for some time.

Torrance

The Chanslor-Canfield Midway Oil Co. finished another small pumper on its Del Amo lease at Torrance early this week. The well was No. 99 which came in pumping 92 bbls. of 16.3 gravity oil from 3,455 feet. The company has three other drillers on this property and rigs going up for three more. The California Petroleum also finished a new producer, but it was somewhat disappointing, as it only made 25 bbls. of dirty oil testing 13.9 degrees and showing a cut of 10 per cent. The well in question was No. 6 Redondo, drilled to 3,452 feet and finished with a 6¼-inch oil string carrying 358 feet of 80 mesh screen. The Superior has just about finished cleaning out its No. 7 Torrance and a test will be made from 3,777 feet within the next few days. The only new spud in this field during the week was No. 28 Torrance of the George F. Getty Co.

The Standard is filing an abandonment notice on No. 18 Bolsa Chica in the northwestern part of the Huntington Beach Field as a duster at 5,813 feet. Mechanical trouble was a contributing factor toward the loss of the hole, but the principal reason was the rather unfavorable outlook. The best the well showed was a little gas and a few colors at 5,656 feet. The equipment has been moved to No. 24 Bolsa Chica and this hole will be spudded in within the next two weeks. No. 23 on this lease is also being rigged up and it, too, will get under way shortly. The company has resumed drilling on its No. 1 Newland following the landing of a string of 15½-inch at 637 feet. The Newland lease consists of around 300 acres originally held by the Union Oil Co., but quit claimed early this summer because of the heavy cost and extreme depth necessary to go for production. The Standard picked up the property a short time later and is reported to have paid a cash bonus for the privilege of drilling. The company is by far the largest operator in the field from a drilling standpoint, the greater part of its work at present being centered on lease B. No. 41 has just been spudded in on this property and it is evident that additional work is contemplated as rig construction has started on No. 42.

Rideout Heights

No. 3 Seward-Rideout of the California Petroleum, a recent completion at Rideout Heights, is on steady production, making 65 bbls. a day from 1,340 feet and the company's success in developing production on this property will probably result in additional work when occasion demands. Because of the shallow depth at which production is secured and the small expenditure required, several new holes will probably be started early next year. It was the original intention of the company to develop deep production, but several conclusive tests proved that this was not feasible. In plugging back these deep holes the company decided to try out the shallow zone passed through between 1,200 and 1,400 feet with the result that it was found commercially profitable. So far, J. E. O'Donnell has been the only operator to develop deep commercial production and in view of the fact that the area is a treacherous one, no further deep drilling will be done for the present. No. 1 Jesurum of the Pan American, a deep well at 4,712 feet, is still making considerable water and it may be necessary to do some more work in order to get clean production.

The Standard and Superior are both preparing to drill new wells in the Montebello Field, the former building a rig on the Manz lease, while the latter is rigging up No. 16 Temple. The former's Manz property in the west side of the field adjoins the Howard Smith lease of the Standard and the Monterey lease of the St. Helens Petroleum. Both wells are in proven territory, although the Superior lease is somewhat beyond the present producing limits. For this reason the Manz well will be watched with interest, because of its location with reference to No. 2 Howard-Smith of the Standard and No. 9 Monterey of the St. Helens, both of which are on production. The Standard's most recent spud in this area was No. 65 Baldwin, now standing cemented at 1,960 feet. The St. Helens Petroleum is carrying two drilling projects on its development list, No. 10 Monterey at 3,500 feet and No. 11 on the same lease, which has just been spudded in. The McGinley Oil Co. has just finished rigging up its No. 24 and with the starting of work on this hole the company will be running three strings of tools.

Richfield

Development work at Richfield is going ahead rather slowly, notwithstanding the deep sand opened up by the Chiksan several months ago, and, in view of the large amount of work being done at Long Beach, it will probably be some time until activity in this area becomes general. There was really very little change in the status of wells in this territory during the week. The Standard's lone driller, No. 20 on Kraemer Lease No. 2, is still held up with mechanical troube at 3,914 feet and it looks as though recovery will be slow. The California Petroleum was the only concern to start any new work, spud being made during the early part of the week on No. 18 Yarnell. The company's No. 10 Richfield Consolidated tested wet at 4,388 feet and it will be plugged back to 4,300 feet. The Chiksan has temporarily suspended work at Richfield, but is going ahead in No. 1 Robinson at Coyote. No. 1 Ninno of the Birch-Royer, which is an outpost in the Coyote Field, is coring ahead at 5,240 feet. This hole looked quite favorable at 5,018 feet, but when water trouble prevented a successful test it was decided to drill ahead and look for something better. The latest entrant into the Coyote district is E. L. Blanton, who

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has secured a lease on the Gualdine property of the Quintuple Oil Co. Blanton is at present hauling in material and will start rig construction during the coming week. The Union has just about finished abandoning No. 11 Hole due to exhaustion at 3,750 feet and material and equipment is being salvaged and returned to stock. The Union's two wildcats at Fullerton on the old Olinda Land Co.'s property are still held up with mechanical trouble and progress is rather slow. The Birch Oil Co.'s No. 2-A is rotating ahead at 3,738 feet, while the Brea Canyon Oil Co. is redrilling in No. 37 at 2,300 feet and rotating ahead in No. 38 at 2,000 feet.

Seal Beach

The Seal Beach area still has the boys guessing, although this favorite pastime may be terminated somewhat sooner than has been anticipated. The Marland picked up 20 feet of fairly good oil sand in its No. 1 Bixby. Of course, production is not by any means assured, but it looks mighty promising. The only discouraging feature in connection with this test is that the Marland picked up the pay about 200 feet deeper than that found by the Shell in No. 1 Bryant, which has been making around 50 bbls. of oil and 1,500 bbls. of water for over a year. This would seem to indicate that the Marland is farther out on the structure, although, of course, this may not be the case. At any rate, some one is going to be wrong when the test is made. The lease on which the Marland is drilling was first held by the Shell, but relinquished following the abandonment of a dry hole in the southern part. The Marland drilled farther north with the result mentioned above. The Standard drilled a deep test less than a mile northwest and although the bit was carried down to 5,510 feet no showings of any kind were found. It is quite possible, of course, that the oil sands were mudded off as the test was drilled with rotary tools. At any rate, they are still guessing, iff-ing and supposing.

The Marine Oil Corp. has abandoned its deep test, No. 1 Waterman, at Newport as a duster at 3,400 feet. The well stopped in a granite formation and this well will undoubtedly hold up any further deep prospecting work. The Barmor Oil Co. staked a location for its first well, but, since material is not yet on ground, it will be some little time before actual drilling starts. Operators in this area have shown a tendency during the past month or so to let up on drilling and, as a result, conditions are somewhat unsatisfactory. Several wells are pumping around 25 bbls. a day, but the rather unfavorable quality of the oil has precluded steady production. Some are also making considerable water and this, too, has had a tendency to cut down new work. The Owl Oil Co. and Harry Whitcup are about the only operators drilling at present, although officials of the Julian Petroleum are seriously contemplating considerable new work. The Owl is working on a 630-foot hole, while Whitcup is down 540 feet.

Midway-Sunset

Although operators out in the Maricopa Flats are pushing their wells forward, none of them is yet in a position to pick up the Obispo sand. It would not be surprising, however, if something developed within the next 30 days. The California Petroleum has a 3,900-foot hole in Section 32-12-23, while the Midland Oilfields, a subsidiary company, has its No. 7, in the same section, down 4,000 feet and another hole, No. 1, at 3,629 feet. The United, in the same section, is still held up with water trouble at 3,615 feet, while the Pacific's test, No. 5-A, is being delayed with defective casing. The General Petroleum's lone test being carried down to the Obispo zone is at 2,500 feet, while the El Dora's No. 8, which has been standing cemented at 3,462 feet, is ready to be drilled ahead. The Julian Petroleum has just about finished rigging up its initial test on the Midway Northern property and spud will be made within the next four or five days. The Obispo's No. 6, which resulted in this new work, is flowing quite steadily at the rate of 1,300 bbls. a day. About 50 per cent of this fluid is water, but the oil separates quite readily. The derrick for No. 10 has been finished for some time, but since the company does not seem to be in any hurry starting work, it will probably remain as a rig pending further developments.

In the Hovey Hills section of the field, the Associated is making preparations to offset the Belridge Oil Co.'s No. 1 Gonyer, in Section 32-32-23. This hole is showing up unusually well, and, although no test was made of the shallow showings found at 1,580 feet, they should prove productive if no deeper horizon is encountered. The Associated is also contemplating some new work in Section 20-31-23 and material will be on ground within the next few days. The Gross Drilling Co. is batting 1,000 per cent in the Elk Hills area and will spud in its No. 3 within the next few days. The company finished its well No. 2 early this week at 3,634 feet and increased its daily production 1,148 bbls., the oil testing 23.6 degrees and showing a cut of 2 per cent. One can appreciate the success which this company has had by going back a year or so and comparing the opinions of geologists with respect to the company's holdings. This lease at that time was considered off structure and productive of the best little water wells in the field. The company's subsequent completions, however, have upset early opinions and there is still some additional acreage to be developed. The Gross Drilling Co. incidentally proved up the Union's Federal lease, which was thought to be on the edge of the structure, although there was previous to the development of production to the east a diversity of opinion. D. B. Myers, assistant chief geologist of the Union, and a very capable engineer, was one of the few who did not agree with the limitations placed upon the structure at that time and his deductions have since been proven to be correct.

Ventura

Development work in the Ventura Avenue Field is going along at a slow but steady rate and, while a regular increase in production is being made each month, the field has unlimited possibilities and production could be boosted another 25,000 or 30,000 bbls. a day if occasion demanded. The average spacing between wells is around six acres and, if desired, this could be reduced to three by additional drilling and another 50 wells put down in Virgin territory not yet developed. The Associated, General Petroleum and Shell are, however, commendably refraining from pushing work and this policy will undoubtedly prove very advantageous and mutually beneficial. The General Petroleum is making very good progress in deepening No. 5 Notten, now at 5,062 feet, and an early completion is expected. The Shell should finish No. 10 Gosnell within the next week or 10 days and good production is expected upon the completion of the production test to be made from 5,086 feet. The Petroleum Securities and the Milham Exploration Co. have just finished rig construction on their respective tests and these two outposts will probably get under way sometime during the next week. The Standard is working on its first diamond core survey on the Argabrite property, but a deep test is not expected to be started within the next two months. The Chanslor-Canfield Midway Oil Co. is still held up with mechanical trouble in No. 1 Hobson at 3,220 feet.

Southern California Wildcats

The Superior Oil Co. has started dismantling and salvaging the equipment used on its test at Belvedere Gardens and, while the present hole is scheduled for abandonment, another test may be drilled before the property is relinquished. This is generally considered as very favorable territory and warrants another test even though it be only a shallow one. The Superior's present well was carried down to 5,023 feet and this, together with another 4,000-foot hole somewhat removed from the present duster, would prove a conclusive test of the area. The Bandini Petroleum is still drilling ahead in its No. 6 DeBaker in the Bandini area and reports a depth of 3,088 feet. In view of several recent abandonments and

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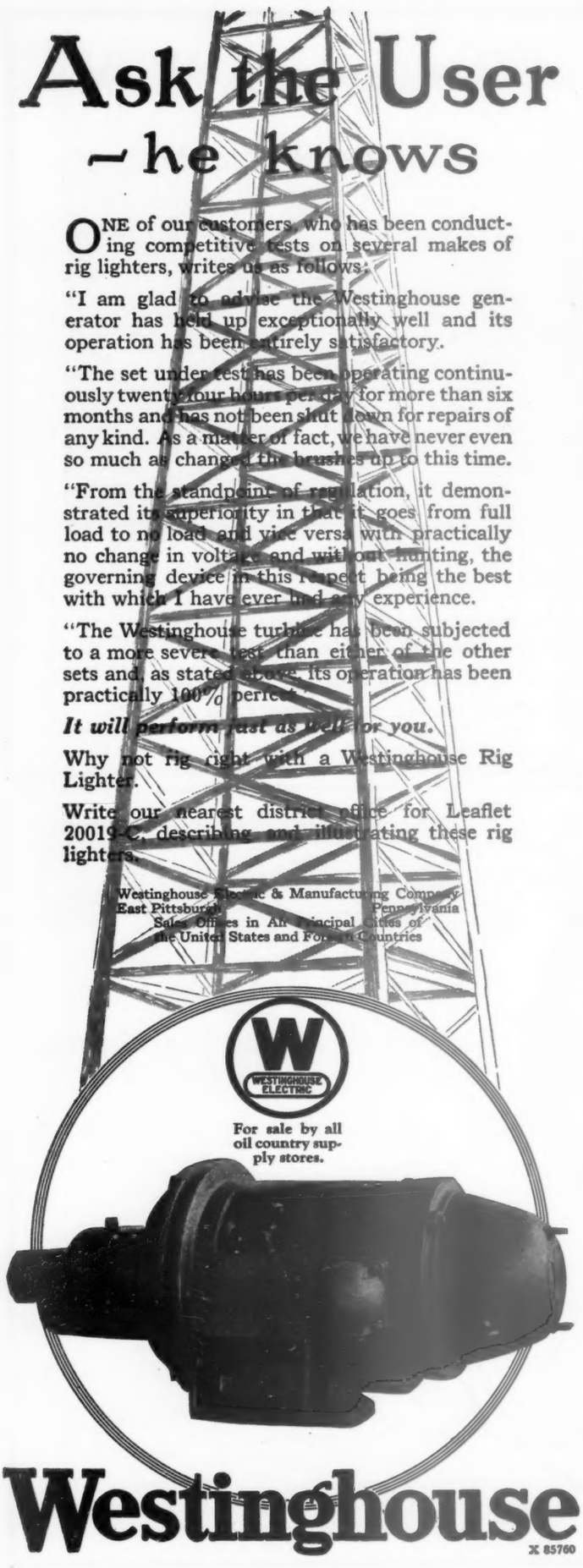

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previous unsuccessful work, the company can only be conceded an outside chance. The Pan American has reached a depth of 1,705 feet in its No. 2 Pacific Southwest at El Segundo and drilling is going ahead rapidly. This is the Pan American's second attempt to develop production in this area and, although a few small colors were reported in the company's original wildcat, they were never tested out due to the fact that the casing collapsed. This hole was carried down and abandoned at 5,000 feet. At the time the Pan American first started work several business men from El Segundo acquired some leases nearby in the hope that production might be developed. These men had just about concluded to drill when the Pan American started its second attempt, but will probably now hold off pending developments.

The Shell's Menchago well up in Brea Canyon is still standing cemented at 445 feet, but drilling will probably be resumed shortly. The Marland spudded in its No. 1 Wickham in the Newhall area late this week and as a result is only going through surface formation. The Milham Exploration Co. is going ahead nicely in its No. 1 Conroy, several miles away, at 1,900 feet, the present formation being a gray sand and shale. The Petroleum Securities created considerable discussion early this week by landing a string of 8¼-inch in its test at Palos Verdes and, while the company reports that it is being landed for protective purposes only, some are inclined to believe that the company has found a few showings. A visit to the well failed to show any indications of oil and the company's report is apparently true.

The Standard is preparing to test out a showing found in its Santa Ana Gardens well at 4,550 feet. The company carried this wildcat down to 5,219 feet, at which depth it was decided that future drilling would be useless. The hole has accordingly been plugged back to 4,669 feet and a string of 8¼-inch set at 4,543 feet in order to test out upper showings. No. 1 Piavan, another of the company's tests approximately 2 miles south, is going ahead in a sticky blue shale at 2,426 feet. No. 1 Von Schriltz of the Shell at Talbert was reported this morning at 3,538 feet, the formation being logged as a sand streaked with shale. The well of the Victor Valley Landowners in San Bernardino County has been suspended at 1,740 feet and will be abandoned shortly. A. P. Hockersmith, who organized the company, started operations on the property about a year or so ago on the advice of an oil locator. He readily admits the fallacy of locating wells with a doodle bug as his experience cost him and his associates $63,000 in cold cash. The present hole is the second drilled by the company on its property located near Hesperia.

Northern California Wildcats

The Shell has finished mapping the territory adjacent to Poso Creek, 20 miles north of Bakersfield, and it will be carried on its reports in the future as the Mount Poso district. The Shell acquired around 10,000 acres in that area a year or so ago and has spent the greater part of the past 12 months in plane-tabling and mapping the entire surrounding country. This territory has always been known as Poso Creek and, although the Standard developed some small production there years ago, water trouble resulted in the withdrawal of the company and interest ceased. Vast strides have been made during the past few years in locating and eliminating water and this information may result in the opening up of a new oil field within the next several months if it is at all possible to do so. The writer has called attention to this area on several occasions as one warranting additional work, although any production secured would probably be of a rather low grade. The John K. Porter well, which is being drilled under the guidance of Shell geologists, has just been given a test at 2,020 feet and, as was expected, showed considerable water. The most encouraging feature in connection with the test was the oil which accompanied the water and, while only a few barrels were produced, it indicates the possibilities of the region and will undoubtedly result in some new work. Quite a number of wells have been drilled in this vicinity to date, but many of them were in the early days before the discovery of the water witch and operators were obliged to give up in despair. A few years ago T. A. Piper drilled a shallow well about 3 miles south of the present Porter well, getting at one time as much as 25 bbls. of oil and water on a pumping test from 1,700 feet. The Modoc Petroleum is negotiating for this property and if successful will spend considerable time in attempting to shut off water and develop commercial production. In view of past drilling it would seem that the most productive area lies north of the present Porter well and this will probably be tried out a little later on. There has been a little leasing in this area of late, although the greater part of the acreage has been tied up for a year or more. C. C. Julian has just taken over an 80-acre lease, while the Julian Petroleum has acquired an additional 160 acres about a mile or so from the Porter well.

The Chanslor-Canfield Midway Oil Co. is still working on its test at Delano, but the well has shown no improvement. The Main Oil Co. was down 4,150 feet yesterday morning in its well No. 2 and preparations will be made within the next few days to land a string of 8¼-inch somewhere between this depth and 4,140 feet. This is the Main's second test, the first hole yielding sufficient gas to meet boiler requirements. No. 1 did not show any oil, but at one time was good for 500,000 feet of dry gas. The Fresno-United Oil Co. is scheduled to make a production test of its wildcat 4 miles west of Raisin City and 12 miles south of Fresno early next week. This well is claimed to have shown some oil and gas at 5,430 feet. Two unsuccessful water tests have already been made, but the field superintendent, J. B. East, has at last secured a shut off. This hole was started some three years ago, although work has been suspended several times while additional funds were raised. A little less than $300,000 has already been spent on the project and company officials are naturally hoping for the best. It does not look, however, as though the company will secure commercial production in view of the fact that the Associated drilled a duster only a few hundred feet north of this well and another a mile southeast. Although the latter was carried down to 6,000 feet, it was abandoned as a duster. The Associated's well north of the Fresno-United's present wildcat was carried down to 6,800 feet without noting anything of importance. The Associated was pretty well sold on this area following the original showing and an exhaustive survey was made. The company started a third test 2 miles from Caruthers, a short distance west of Raisin City, but lately abandoned it at 5,400 feet. A fourth test, about 7 miles north of Kerman and about 20 miles northwest of Raisin City, was started a little later in Section 35-13-26. The company is still working on this hole, which showed a little oil sand at 5,740 feet. Unluckily a twist-off occurred and work is being temporarily held up pending recovery of approximately 750 feet of drill pipe.

The Nugent Oil Co. ran into a difficult fishing job in No. 1-A Catlin at 4,270 feet and the company will give this Santa Barbara wildcat a production test from the 3,800-foot level. If nothing is developed the hole will probably be abandoned as a recovery is quite doubtful. H. E. Becker's test at Summerland is going ahead in a brown shale at 1,398 feet and, although nothing has been picked up to date, drilling will continue. The Associated Oil Co. made a technical spud in Section 2-20-6 in order to hold its acreage in Monterey County and the well will be allowed to stand pending development on the Harriman-Jones well. The latter company, by the way, is cleaning out its test in Section 20-19-6 preparatory to adding some additional hole. The San Martinez Oil Co. has reached a depth of 5,300 feet in its Yolo County test in Section 36-11-1, but the only encouragement found to date has been a little gas.

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NORTH LA.-ARKANSAS

(Continued from Page 42)

abandon No. 2 Cook, Section 16-16-15, at 2,643 feet. J. D. Reynolds is rigging up to drill No. 1 Dumas, Section 15-17-18.

Roxana Petroleum Corp. is waiting for standard rig to pump in 500 feet of oil and 7 feet of sand at 2,384 feet in No. C-5 Flenniken, Section 8-16-15. Russell and others are coring at 2,888 feet in No. 1 Brown, Section 8-17-14. Simms Oil Co. is waiting for standard rig to pump 800 feet of oil and 2 feet of sand at 2,449 feet in No. A-1 Murphy, Section 15-16-15. Southern Crude Oil Producing Co. is drilling at 2,490 feet in No. 9 Graves, Section 3-16-15; drilling at 2,000 feet in No. 3 Lawton, Section 7-16-15; rigging up to drill No. 4 Lawton, same section; cemented 8-inch at 2,359 feet in No. 7 Lyell, Section 3-16-15.

Standard Oil Co. set 6-inch casing at 2,522 feet in No. 23 J. H. Alphin, Section 3-16-15. Stone Oil Co. tested salt water, fishing for 2-inch tubing at 2,774 feet in No. 1 Davis, Section 28-16-14. Sun Oil Co. has drill stem stuck at 2,431 feet in No. 6 Hatfield, Section 6-16-15; has temporarily abandoned No. 18 Hays, Section 3-16-15; and is arranging to set 4-inch at 2,549 feet in No. 1 McClanahan, Section 1-16-16.

Sure Oil Corp. cemented 6-inch casing at 2,460 feet in No. 4 Murphy, Section 15-16-15.

The Texas Co. is drilling at 2,387 feet in No. 9 Alphin, Section 3-16-15; bailing 8 feet of sand at 2,548 feet in No. 10 Alphin, same section; arranging to set 4-inch at 2,527 feet in No. 11 Alphin, same section, and has drill stem stuck at 2,555 feet in No. 12 Alphin, another well same section; cemented 10-inch at 503 feet, drilling at 980 feet in No. 1 McClanahan, Section 12-16-16.

Thurman and others are blowing to test in 6 feet of sand at 2,554 feet in No. 7 Wilson, Section 6-16-15; cemented 6-inch at 2,552 feet in No. 8 Wilson, same section, and has derrick up for No. 9 Wilson, same section; drilling at 2,180 feet in No. 1 Tatum, Section 7-16-15.

Unity Petroleum Co. has shut down and is waiting orders at 2,596 feet in No. 6 Bilyew, Section 8-16-15; Wingfield and others cemented 6-inch at 2,861 feet in No. 3 Lyons, Section 7-17-14.

Ouachita County

Howell and others have junked and are arranging to skid derrick 20 feet west for No. 5 Williams, Section 3-16-15; Humble Oil & Refining Co. is rigging up to drill No. B-8 Arnold, Section 26-15-15; waiting for standard rig to pump in 250 feet of oil and 26 feet of sand at 2,022 feet in No. B-7 Arnold, Section 26-15-16; drilling at 2,160 feet in No. 4 Hildebrandt, Section 28-15 15; drilling at 2,065 feet in No. 4 H. Laney, Section 31-15-15; set 10-inch at 505 feet in No. 6 Jones-Umsted, Section 4-16-15.

Kouri and others are drilling out cement at 2,431 feet in No. 2 Snowhill Church, Section 28-15-15.

Magnolia Petroleum Co. is rigging up to drill No. 10 J. Goodwin, Section 5-16-15; set 8-inch at 2,356 feet in No. 11 J. Goodwin, same section; Ohio Oil Co. is waiting for standard rig to pump in 95 feet of broken sand at 2,090 feet in No. B-7 Lewis, Section 26-15-16; tested salt water, recemented hole, 66 feet of broken sand at 2,054 feet in No. B-8 Lewis, same section.

Phillips Petroleum Co. is waiting for standard rig to pump 900 feet of oil, 5 feet of sand at 2,552 feet in No. 6 Johnson, Section 34-15-15; shot well at 2,589 feet, full of salt water, arranging to abandon No. 14 Joyce, Section 33-15-15, at 2,589 feet; drilling at 2,265 feet in No. 10-A Laney, Section 31-15-15. Pure Oil Co. is drilling at 2,323 feet in No. 11 Bristerm, Section 28-15-15; drilling at 1,200 feet in No. 1 Stout Lumber Co., Section 27-15-18.

J. D. Reynolds is drilling at 1,400 feet in No. 1 Smith, Section 13-15-17; Reynolds and others are drilling at 2,290 feet in No. 2 Fee, Section 25-15-17; Sam Richardson is drilling at 2,220 feet in No. 3 Rhoten, Section 32-15-15.

Simms Oil Co. is fishing for 2-inch drill stem at 2,625 feet in No. 5 Hildebrandt, Section 28-15-15; tested salt water at 2,694 feet, waiting orders at 2,694 feet in No. 10 F. A. Laney, Section 31-15-15; recemented 6-inch at 1,658 feet, drilled plug, blowing casing at 2,581 feet in No. 11 Laney, same section; arranging to bail 25 feet of sand at 2,622 feet in No. 7 Murphy, Section 29-15-15.

Standard Oil Co. cemented back to test second sand at 2,200 feet in No. 9 J. Griffin, Section 33-15-15; cemented back to test first sand at 1,950 feet in No. 7 Umsted, Section 22-15-15; set 10-inch at 296 feet in No. 31 Umsted, Section 33-15-15, drilling at 1,972 feet; cemented back to test second sand, 2,350 feet, No. B-5 Umsted, Section 32-15-15.

Sun Oil Co. is waiting for standard rig to pump at 2,608 feet in No. 5 Johnson, Section 30-15-15.

Superior Oil Co. plugged back to 2,559 feet, arranging to test 11 feet broken sand at 2,559 feet in No. 2 Flannigan, Section 6-16-15; set 10-inch at 246 feet, drilling at 730 feet in No. 3 Flannigan, same section.

The Texas Co. is setting 2-inch with packer, 1,900 feet oil, 4 feet sand, at 2,595 feet in No. 1 Wright, Section 2-16-15. Sid Umsted recemented bottom hole at 2,572 feet in No. 3 Fee, Section 4-16-15. Vandiver and others waiting orders at 920 feet in No. 1 Yarbrough, Section 22-14-17. Woodley Petroleum Co. cemented 4-inch at 2,352 feet in No. 1 Umsted, Section 4-16-15.

Stephens Field

Buffalo Oil Co. set 6-inch at 1,485 feet in No. 3 Morgan, Section 22-15-9.

Arkansas Wildcats

Ashley County—Rhodes & Kirker are drilling at 120 feet in No. 1 Bledsoe, Section 20-15-7, 16 miles south of Monticello.

Bradley County—Gulf Refining Co. is arranging to abandon No. 1 Benson, Section 25-15-9, half way between Warren and Hamburg.

Calhoun County—Gulf Refining Co. set 4-inch at 2,621 feet in No. 1 Freeman Smith Lumber Co., Section 31-15-13, 6 miles east and a little south of Camden. Magnolia Petroleum Co. hit top of red shale at 3,012 feet, drilling red shale at 3,067 feet in No. 1 Calion Lumber Co., Section 29-15-14, 6 miles north of Smackover production.

Cleveland County—Simms Oil Co. is drilling in gumbo at 2,698 feet in No. 1 Moseley, Section 19-10-11, 8 miles east of Fordyce.

Columbia County—Hude & Aarnes are drilling in lime at 2,765 feet in No. 2 Brown, Section 13-15-20 in the Stephens Field.

Natural Gas & Petroleum Co. is drilling in sandy shale at 2,942 feet in No. 1 Hays, Section 30-19-18, 15 miles northeast of the Springhill district.

Dallas County—McNeil and others are fishing for 4-inch drill stem at 2,104 feet in No. 1 Owens, Section 29-10-16, 16 miles west of Fordyce.

Hempstead County—Burton and others are drilling at 1,000 feet in No. 1 Garland, Section 23-10-25, 4 miles north of Washington. Tarver and others are drilling at 2,547 feet in No. 1 Swafford, Section 14-11-25, 1 mile east of Washington and about 8 miles northwest of Hope.

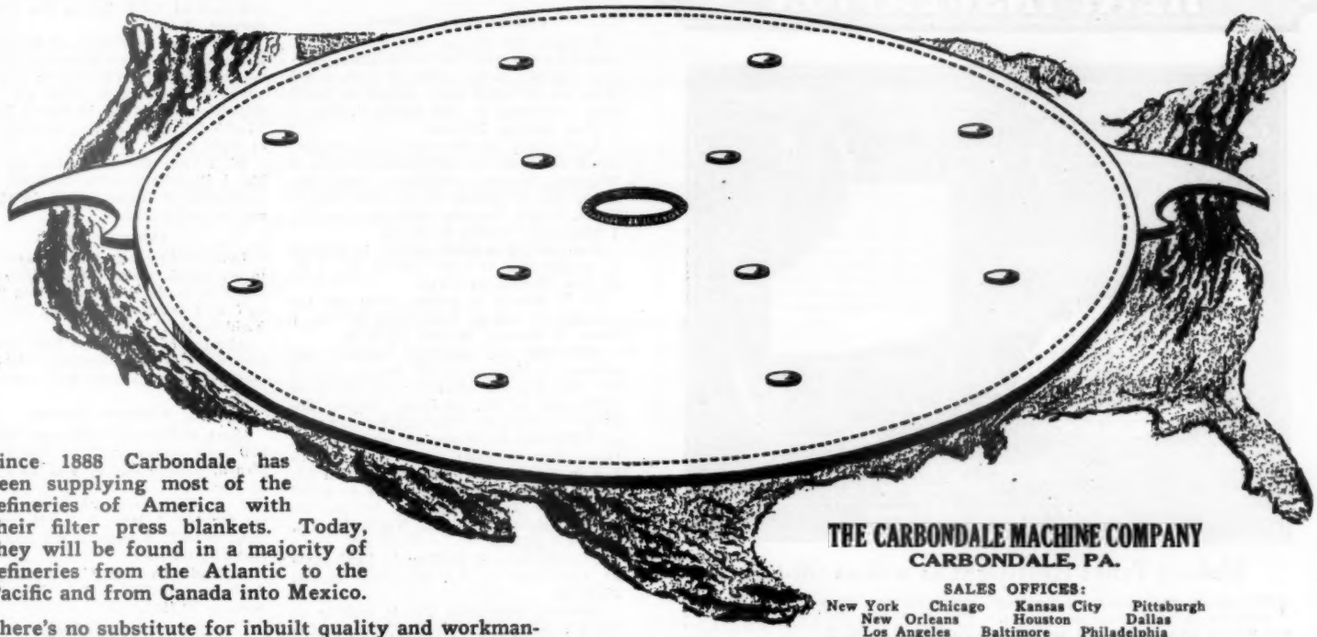
Lafayette County—Arkansas Fuel Oil Co. has derrick up for No. 2 Allen, Section 19-19-24, 2 miles east of Bradley, and has rig up for No. 1 Red River Land Co., Section 18-19-14, 1 mile north of the Allen well. Humble Oil & Refining Co. tested salt water, no show, at 2,428 feet in No. 1 Reed Bodcau, Section 16-15-22, 15 miles west of the Stephens Field.

Little River County—Grote and others have tested salt water, show of oil, at 2,932 feet in No. 1 Allen, Section 2-13-31.

Miller County—Buzzard Bluff Oil Co. is rigging up to drill No. 1 Munn, Section 22-14-26. Humble Oil & Refining Co. has made locations for No. 1 Edwards, trustee, Section 26-17-28, and No. 1 McKnight, Section 17-17-26, the Edwards well being 6 miles west of Foulke, the McKnight well being 8 miles southwest of Lewisville.

Nevada County—Brewer and others are drilling at 2,410 feet in No. 1 Lister-Holten, Section 22-14-20, 3 miles north

From Coast to Coast



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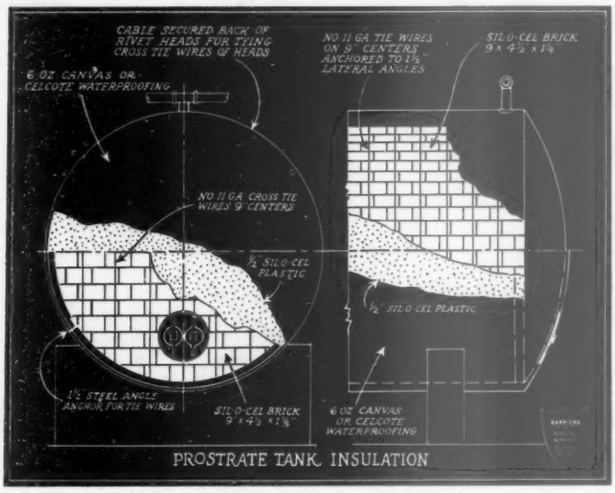
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FIRE BRICK CEMENT

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of the Stephens Field. Greason and others set 6-inch at 581 feet and 4-inch at 1,169 feet in No. 1 Ellis, Section 2-14-21, 19 miles north of Magnolia. Magnolia Petroleum Co. is drilling in lime at 3,640 feet in No. 1 B. F. Johnson, Section 3-15-21, 13 miles north of Magnolia and 6 miles west of the Stephens Field.

Cotton Valley District

Fortuna Oil Co. is drilling in chalk rock at 3,650 feet in No. 1 Bible, Section 8-20-10; tested 7 feet of sand, small show oil at 2,547 feet, drilled to 2,552 feet, arranging to test again in No. 1 I. Cox, Section 23-21-10.

J. F. Giles, trustee, tested salt water, small show oil at 3,093 feet in No. 1 Weghost, Section 20-23-11. Gulf Refining Co. is rigging up to drill No. 1 R. H. Coyle, Section 15-21-10, and No. 1 Marshall, Section 21-21-10.

Humble Oil & Refining Co. is drilling in broken lime at 3,400 feet in No. 1 R. R. Cox, Section 22-21-10.

R. U. Morten is pulling liner and arranging to test at 2,546 feet in No. 1 Josey & Massey, Section 27-21-10.

Ohio Oil Co. cemented 12-inch and drilling in lime at 2,185 feet in No. 1 W. Cox, Section 23-21-10; set 6-inch at 2,525 feet in No. 19 Gray, Section 26-21-10; waiting for standard rig to pump at 2,559 feet in 18 feet of sand, No. 20 Gray, same section; set 10-inch at 315 feet in No. 2 E. W. Hodges, Section 15-21-10; drilling in chalky shale at 3,190 feet in No. 1 A. J. Hodges, Section 23-21-10; rigging up to drill No. 3 Sandlin, Section 27-21-10.

Palmer Corp. is drilling in hard shale at 4,459 feet in No. 1 Davis, Section 23-21-10.

Woodley Petroleum Co. is drilling at 2,515 feet in No. B-3 Gray, Section 27-21-10.

Bienville Parish

Hawks and others drilling in red shale and gumbo at 992 feet in No. 1 Calhoun, Section 15-19-7, 8 miles south of Homer Field and 5 miles north of Gibbsland.

Bossier Parish

Arkansas Fuel Oil Co. is moving in rig for No. 1 Murray, Section 14-23-14, 8 miles northwest of Plain Dealing. Benton Syndicate has derrick up for No. 1 Bulkley, Section 9-20-13, 2 miles north of Benton. Square Deal Oil Co. set 8-inch at 140 feet, drilling at 715 feet in No. 1 Hall & Rumbough, Section 17-18-11, 1 mile northwest of Haughton.

Bellevue Field

Olmsted and others are drilling in gumbo at 200 feet in No. 1 Strange, Section 23-19-11.

Caddo Parish

In the Pine Island district, Dixie Oil Co. set 10-inch at 80 feet, drilling at 636 feet in No. 70 Robertshaw, Section 14-21-15; Fortuna Oil Co. has shut down at 1,620 feet in No. 20 Raines, Section 22-21-15; tested 7 feet of sand at 2,235 feet in No. 1 Spell, Section 29-21-15; set 10-inch at 141 feet in No. A-7 Hampton, Section 15-21-15; Ohio Oil Co. is drilling at 2,540 feet in No. 1 J. B. Ardis, Section 1-21-15; drilling at 2,871 feet in No. 18 E. K. Smith, Section 12-21-15; Page & Caldwell are drilling at 650 feet in No. 1 Hobbs, Section 29-21-15; The Texas Co. set 8-inch at 41 feet, drilling at 356 feet in No. 9 Mabry, Section 13-21-15.

In the Hosston district, Austin Oil Co. set 10-inch at 60 feet, 6-inch at 1,020 feet, waiting for standard rig to pump at 1,050 feet in No. 21 Peak, Section 24-22-15; Dixie Oil Co. set 4-inch at 3,580 feet in No. 1 Jolly, Section 27-22-15; Henderson and others are shut down at 1,810 feet in No. 1 Caldwell, Section 29-22-15; Shawmut Petroleum Co. set 6-inch at 977 feet, waiting for standard rig to pump at 1,002 feet in No. 4 Jolly, Section 22-22-15.

In the Oil City district, Bratcher and others have a flow of salt water in 1 foot of sand at 1,896 feet in No. 1 Files, Section 10-20-16; Fortuna Oil Co. is drilling in lime at 3,995 feet in No. 2 Levee Board, Section 8-20-15; D. C. Richardson is drilling at 2,070 feet in No. 1 Youree & Randolph, Section 13-20-15; set 6-inch at 650 feet in No. 2 Youree & Randolph, same section, and completed making 500,000 feet of gas at 793 feet on December 9.

In the old Caddo Field, Gulf Refining Co. set 10-inch at 175 feet, drilling at 290 feet in No. 223 Ferry Lake, Section 16-20-16; moving in rig for No. 224 Ferry Lake, Section 20-20-16, and the Standard Oil Co. is drilling in sand and rock at 1,025 feet in No. 175 Stiles, Section 27-21-16.

Four miles southwest of Mooringsport, Haynes Brothers set 6-inch at 3,679 feet, now drilling at 2,712 feet in No. 1 Louisiana Live Stock & Plant Co., Section 8-19-16, and drilling in No. 2 Louisiana Live Stock & Plant Co., Section 4-19-16, at 1,700 feet.

W. J. Stauffer is rigging up to drill No. 1 Crarcke, Section 17-23-16, 2 miles northwest of Rodessa, and in the north end of the parish.

Caldwell Parish

Potts & Crickett, trustee, are reaming to set 6-inch, claim 5 feet of sand at 1,347 feet in No. 1 Gore, Section 33-12-3e, half way between Columbia and Urania Field.

Alexandria and others have derrick up for No. 1 Cruse, Section 6-12-4e, formerly reported as being in Catahoula Parish.

Claiborne Parish

Clark & Melat hit Blossom sand at 2,909 feet, coring at 2,919 feet in No. 1 Heard, Section 5-21-6, 4 miles northwest of Homer.

J. P. Evans and others are moving in rig for No. 1 Mrs. P. L. Boatner, Section 10-19-5, 7 miles north and a little east of Arcadia.

Triangle Drilling Co. is waiting for drill stem at 730 feet in No. 1 Baker, Section 13-19-6.

Catahoula Parish

Ferguson & Kimbrough Oil & Gas Co. is drilling at 1,918 feet in No. 1 Nichols, Section 31-9-6e.

DeSoto Parish

Bentley and others tested small show of gas, no oil, bailing at 2,328 feet in No. 1 Hewitt-Ricks, Section 10-11-14, in the old Spider district and 7 miles west of Mansfield.

In the Naborton Field, Dixie Oil Co. is drilling in lime at 3,080 feet in No. 1 Jenkins, Section 9-12-11; Gulf Refining Co. set 6-inch at 739 feet in No. A-33 Jenkins, Section 4-12-11, and drilling in lime at 5,578 feet in No. C-18 Willis-Williams, Section 31-13-11.

Fortuna Oil Co. is drilling in lime at 4,125 feet in No. 1 Alexandria, Section 32-12-15, 5 miles east of Logansport.

The Texas Co. is drilling at 1,901 feet in No. A-9 Wemple, Section 9-12-11.

Jackson Parish

El Dorado Chief Oil Co. is drilling in lime at 3,645 feet in No. 1 H. Rhymes, Section 13-14-4w, 3 miles southwest of Jonesboro.

LaSalle Parish

Ayers and others are rigging up to drill No. 2 Urania, Section 13-10-1e, 2 miles west of Urania.

Beckman and others set 10-inch at 42 feet in No. 2 Urania, Section 25-10-1e, 3 miles south of Urania and 1 mile east of Tullos.

Dixie Oil Co. set 10-inch at 42 feet, drilling at 300 feet in No. 1 Urania, Section 24-10-1e, 1 mile north of Tullos.

Dickinson and others have derrick up for No. 1 Sander, Section 27-10-1e, 2 miles west of Tullos. Gould & Monroe have derrick pattern for No. 1 Tullos, Section 13-10-1e. Keene & Woolf Oil Co. set 6-inch at 1,548 feet in No. 1 Urania, Section 19-10-2e. Sam Hunter is drilling at 860 feet in No. 1 Louisiana Central Lumber Co., Section 27-10-2e. Louisiana Oil & Refining Corp. is waiting for standard rig to pump with hole full of oil and 4 feet of sand at 1,574 feet in No. 1 Tremont, Section 20-10-2e.

Natural Gas & Petroleum Co. set 10-inch at 40 feet, drilling at 300 feet in No. 1 Tullos, Section 25-10-1e, and has derrick up for No. 2 Tullos, Section 24-10-1e.

Urania Petroleum Co. is drilling at 1,586 feet in No. 10 Urania, Section 19-10-2e, offsetting discovery well.

J. P. White is drilling at 2,057 feet in No. 1 Louisiana Central Lumber Co.,

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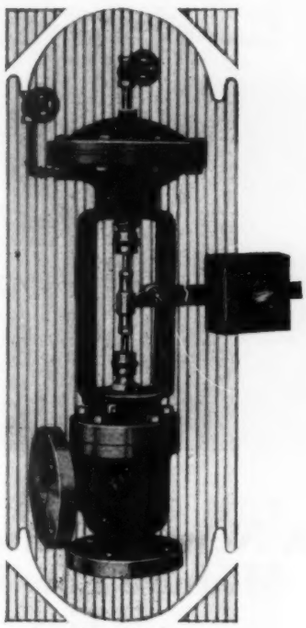

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Section 27-10-2e, just 6 miles south ol Olla and 3 miles east of discovery well.

Ziegen and others are drilling at 1,385 feet in No. 1 King, Section 13-10-1e.

Morehouse Parish

Amerada Petroleum Corp. is rigging up to drill No. 1 Wafer, Section 3-11-8. R. C. Boisseau and others did not bail casing, drilling in gumbo at 2,180 feet in No. 1 Sullivan, Section 11-21-7e, 10 miles east and a little north of Bastrop.

United Carbon Co. is drilling at 1,690 feet in No. 1 Grey, Section 16-20-5.

Ouachita Parish

Ladell and others have derrick up for No. 38 Fee, Section 29-11-4e. Palmer Corp. is drilling in gumbo at 1,810 feet in No. 1 K. Cole, Section 36-20-4e. Southern Carbon Co. has derrick up for No. 17 Fee, Section 35-19-4e, and the United Carbon Co. set 8-inch at 829 feet, blowing out casing at 843 feet, No. 1 Archie, Section 24-20-4e.

Rapides Parish

Hincey & Macke are drilling at 1,250 feet in No. 1 Barrow, Section 29-5-2e.

Sabine Parish

Toro Petroleum Co. set 6-inch at 1,500 feet in No. 1 Pickering Lumber Co., Section 24-5-12, 12 miles south of Many.

Union Parish

Natural Gas Producing Co. is rigging up to drill No. 1 Scott, Section 8-20-4e, 10 miles southwest of Bastrop. United Carbon Co. has derrick up for No. 1 Schwab, Section 2-20-3e, half way between Farmerville and Bastrop.

KANSAS

(Continued from Page 36)

23-10. The Mid-Continent Petroleum Co. has spudded No. 5, NW cor. SE SW Section 18-22-11. Empire Gas & Fuel Co. has the rig up for No. 2 Greenwood, SE cor. SW SE Section 19-22-11. Phillips Petroleum Co. has built the rig for No. 3 Coffman, SW cor. NW NE Section 30-22-11, and the rig is on the ground for No. 4 Coffman, NE cor. NW NE Section 30-22-11. Tidal Oil Co. has the rig up for No. 1 Pees, NE cor. SE Section 30-22-11. Simons and others have rigged up No. 1 Frankenhouser, NW cor. NE NW Section 4-22-12. Lewis Oil Co. has spudded No. 1, C S half NW NW Section 6-22-12. Mid-Continent Petroleum Corp has rigged up No. 7 Shadel, C SW Section 15-23-13. Empire Gas & Fuel Co. has completed No. 7 Barr, NE cor. NW NW Section 23-23-13. Sand was 1,775-1,823 feet and the well was shot with 80 quarts and is making 25 bbls. Marland Oil Co. and Christy have a well in No. 8 Hessler, SE cor. NW SW Section 23-23-13. Lime was topped at 1,725 feet and the pay was found 1,755-77 feet. The well is good for 30 bbls. after a shot of 100 quarts.

Iowa-Kansas Oil Co.'s No. 1 NW cor. SE Section 25-23-13, is dry and abandoned at 1,729 feet. Pure Oil Co.'s No. 13 Handley is making 15 bbls. after a shot of 40 quarts in sand 1,655-75 feet.

In the Polhamus Pool, Polhamus and others have drilled in No. 3, CEL NE NE SE Section 27-24-9. Sand was 2,123-88 feet and the well is good for 15 bbls. after a shot of 160 quarts. Lee Ward has spudded No. 1-A, NE cor. SE NE Section 27-24-9. Roth & Faurot have completed No. 7, NE cor. NW SW Section 12-25-8. Sand was 2,295-2,308 feet and the well was shot with 30 quarts and is making 20 bbls. National Refining Co. has the rig on the ground for No. 1 Wallace, SE cor. SW SW Section 11-25-9.

Ward McGinnis has spudded No. 1, SE cor. NW Section 30-24-11. Roth & Faurot have completed a shallow gas well in No. 1, SW cor. NW SW Section 36-25-11. Sand was 513-560 feet and the well is shut in with 2,500,000 feet of gas. McCain & Johnson have a failure in No. 1 Mason, SE cor. SW SE Section 14-25-13. It is abandoned at 1,535 feet. Roth & Faurot have a duster in No. 1, NE cor. SW NE Section 16-27-9, which will be plugged from a total depth of 2,728 feet. Beacon Oil Co.'s No. 2, CWL NW NE NW Section 24-26-9, is dry and abandoned at 2,300 feet.

Chase County

John H. Markham, Jr., has a dry hole in No. 6, NE cor. NW NW Section 8-22-4. It is abandoned at 2,500 feet. J. H. Reid and others have spudded No. 1, NW cor. SE Section 17-22-9. Dingee, Pryor and Lockhard have spudded No. 1, NW cor. SE Section 25-21-9. Selby Oil & Gas Co. has a rig up for No. 6 Shambaugh, SE cor. NW SE Section 35-22-9, and No. 5, SE cor. NE SE Section 35-22-9, had sand 2,537-51 feet and is completed for 15 bbls.

Lyon County

M. B. Leonard has a rig on the ground for No. 1 Reece, SW cor. SW Section 16-20-10. In the Madison Pool, the Phillips Petroleum Co.'s No. 1, NE cor. SE Section 32-21-12, had sand 1,870-95 feet and was shot with 100 quarts and is making 75 bbls. Fisher Oil Co. has a machine in for No. 1 O'Connor, SW cor. NE Section 9-21-13.

Marion County

West of the Florence Pool, the Empire Gas & Fuel Co. and Chris. Sheedy have rigged up No. 4 Allison, NW cor. NE Section 24-21-4.

Sedgwick County

Waite Phillips Co. has spudded No. 1-A Mickelson, SW cor. NE Section 32-29-2w.

SOUTHWEST TEXAS

(Continued from Page 48)

Karnes County

Earl B. Reynolds has not yet drilled in No. 1 Butler in Karnes County near Runge. He has casing set at 3,061 feet.

Kleberg County

Humble Oil & Refining Co.'s second producer in Kleberg County about 40 miles southwest of Corpus Christi and 7 miles southeast of Kingsville is reported as flowing about 25 bbls. a day at a depth of 2,300 feet instead of 1,900 feet, as reported last week and is estimated to be good for about 300 bbls. on the pump. It is the first producer on the King ranch and is close to an arm of Baffins Bay. While the Humble is reported to have all the leases within gun shot of the well, including the famous King ranch of 1,500,000 acres, yet importance attaches to the new field due to its location on the gulf and the possibilities of the coast country both up and down the coast. Tampico is the closest production on the north. The Humble has other rigs running in the field and has lately shipped out some oil from its first producer which was brought in on submerged lands belonging to the State of Texas. No. 1 Dennett, of a mile away is drilling at 2,475 feet and No. 1 Kleberg is drilling at 1,500 feet. No. 2 Cross State, which was the discovery well, and No. 2, King, which is the new producer, are about 250 feet apart.

LaSalle County

Location has been made in the center, approximately, of the Dobie ranch in LaSalle County, a ranch of 54,000 acres, for the first wildcat test by the DeLange-Eiser Development Co., which has been organized by Rodney DeLange of St. Louis and M. W. Eiser of San Antonio, formerly associated as DeLange, Eiser & Co. Location for the well was made by R. L. Schoolfield, formerly geologist with the Roxana Petroleum Corp. Rig is already on the ground and derrick will be erected at once. The location is at the lower or southwestern end of the Crowther Monocline shown on the maps in the Alexander Duessen report which was printed by the Government as professional paper No. 126. With the exception of some indifferent efforts the territory is new to the wildcatter.

Live Oak County

George B. Pickett's No. 1 George West, a little south of Three Rivers in Live Oak County, is drilling at a little below 1,400 feet. It has been having considerable rock. It is understood The Texas Co., which has completed the fourth hole in Live Oak a little north of Oakville, is enlarging its block of acreage. One fairly good-sized gas well well at about 850 feet is the results of its operations

thus far. The last test stopped at 3,600 feet, having passed up the gas sand at 850 feet.

Houston Pipe Line Co. (subsidiary of Houston Oil) completed its No. 1 Cartwright in Live Oak County 12 miles from the south line of the county at 1,700 feet, making 45,000,000 feet of gas and proving a territory 3 miles long and a mile wide. The gas sand being developed is at 1,650 to 1,700 feet and No. 11 well gives the company seven producers in that field. No. 12 is now being completed and is a good well at the same depth and No. 14 is drilling 1,200 feet northwest of No. 11 and if it results in a producer will extend the gas area that far. The first well drilled by the Houston in that field resulted in a blowout and a crater at 850 feet and additional wells were unsuccessful in that sand.

Milam County

Bordwell & Pamplin are starting a test south of Rockdale in Milam County in the hope of opening a new shallow pool at around 650 feet. The Rockdale Field northwest of Rockdale is producing from below 1,000 feet. The new wildcat is in a territory blocked by J. P. Brunton and on it some tests have been sunk that had showings at the shallow depth. The last test by Great Republic Co., No. 1 Holliman, was abandoned at 1,800 feet after getting the shallow showing at 640 feet. The new test will be started at once and will be one location from the abandoned well.

In the shallow field, Bowman Oil Co. completed No. 5 Gaither, estimated as a 7-bbl. well, and Clear Lake Oil Co. completed No. 7 Coulter, estimated at 30 bbls. Triangle Oil Co. is drilling No. 1 Coulter at 600 feet; Roundtree, White & Simpson are drilling No. 11 Bluebonnet and have completed No. 10 Bluebonnet, pumping 15 bbls. Rockdale Development Co.'s No. 3 Gaither has set casing at 1,115 feet. No. 2 is pumping 30 bbls. and No. 1, which is one of the best wells in the field, is pumping 60 bbls., it having been recently completed. Milam Production Co. has spudded in No. 4 Gaither.

In wildcat territory in Milam, Joel Terrell and others have spudded in No. 1 Newton, northeast of Rockdale and close to Milano. J. F. Whifley is preparing to start a wildcat test at Davidson's Creek on the Burleson-Milam County line.

Sell Rockdale Production

Leases held by John E. Lee and his associates in the Rockdale shallow field amounting to 365 acres and with wells making a total daily production of 125 bbls. were sold the past week to Elbert Williams of California. The consideration was not made public. The properties were held by the following companies: Rockdale Oil Co., Lee Oil Co., Lee-Phillips Co., Lee-Niehaus Co., Lee-Haus Oil Co. All of his holdings in the Rockdale shallow field with the exception of the lease held by the Roundtree-Lee Oil Co. and a lease on the Leonard Isaacs farm, were included in the sale. Mr. Lee has been operating in the Rockdale Field ever since 1921. He has drilled a deep test on the Leonard Isaacs and it is understood hopes to get some deep production on that lease.

Mirando Territory

In the Mirando territory the past week, including the drilling in Webb, Zapata, Jim Hogg and Duval, there have been several oil wells and some gas wells added to the production of the fields.

Webb County

In Webb County in the south edge of the Aviators Pool George M. Ball and the Rydal-Crown Central have each brought in some important wells since they extended the field. George M. Ball completed No. 1 well on Block 74 of the Edgingston subdivision of the Puig Brothers tract. The location is 450 feet north of the south line and 150 feet east of the west line and the well is good for 150 bbls. on the pump and is the farthest east, being just one location east of any other wells in that part of the field. Rydal Oil Corp. and Crown Central Oil Corp., joint owners of some of the Bruni land immediately south, completed No. 2 Bruni, about a quarter of a mile west of Ball and 600 feet south and good for 126 bbls. on the pump. Just 300 feet west of it in the northeast corner of Block 15 of the Bruni tract No. 1 Bruni of the same interests is a good gas well. The next well to be drilled in of especial interest is Keene and others' No. 1 Bruni 825 feet east of the Rydal-Crown Central No. 2 and about 300 feet east and 600 feet south of the Ball well. The Keene well got a good core at 1,704 feet and is about ready to drill in. If it makes a well it will help to indicate that the trend of the field is to the southeast, the No. 1 Bruni gas well of Rydal-Crown Central cutting it off on the west. The Kirkpatrick No. 1 Bruni on survey 835 that came in gauging 8,000,000 feet of gas is a mile south and 3,000 feet west.

In Zapata County a few miles south of the Aviators Pool and about 1 mile east of the old Mirando Valley Pool Tom Wren is drilling on survey 254 and has had a favorable showing at shallow depth that would indicate he was on structure. The well is about midway between the old Mirando Valley Field and the new Jim Hogg County or Henne, Winch & Fariss Field.

Nueces County

The Texas Co. is erecting its derrick near Tule Lake in Nueces County on the Robert Driscoll farm and the machinery is expected to arrive any day.

McMullen County

Eugene Sights spudded in on the Franklin ranch a few miles north of Tilden, the county seat of McMullen County, a week ago and has set surface casing and is drilling at about 300 feet. Mission Oil Co. in the west central part of McMullen County has set 8¼-inch at 1,900 feet due to caving formation and not with intention to test.

San Patricio County

Seagraves & Moody are building a derrick at White Point for the first of a series of tests on a 10,000-acre block they have just completed there. John Sigmund is expecting to get started on his No. 7 McCampbell near Aransas Pass in San Patrico County soon after the first of the year.

Starr County

Dauchy & Bryant's No. 1 Kelsey in Starr County is drilling at 1,300 feet and with no unusual occurrences. The Killam No. 1 Guerra in the same county was ready to spud in a few days ago and is probably drilling at this time.

GULF COAST

(Continued from Page 38)

land for two years, drilling deep tests. No. 1 Le Blanc, 1½ miles west of the Saline Dome, was drilled to 4,500 feet. No. 2 Le Blanc, 1¼ miles west of the dome, was abandoned at the same depth. No. 1 Landry, 2 miles south of the Jefferson Island Dome and between it and the Avery Dome, also was abandoned at 4,500 feet and No. 1 Loughridge, three-quarters of a mile west of the dome, was recently abandoned at 4,500 feet. The logs and formations of these tests have been carefully made and filed. No. 1 Salt Mine is on the south side and No. 1 State land is on the southwest flank of the dome.

The Texas Co. is rigging No. 1 La Doniols Land Co. in Evangeline Parish and J. Dannebaum's No. 1 Veedine, in Bayou Teche in St. Mary Parish. Leland & Wilcox's No. 1 Caffery, Cote Blanche Island, is idle.

Drilling in the Pools

Paggi Brothers' No. 1 Lewis, at Saratoga, is drilling around 950 feet. The San Bernard Oil Co.'s No. 18 Hooks is drilling around 1,200 feet.

At Batson The Texas Co.'s No. 1 Lejarza is drilling around 3,440 feet. The Kirby Capitol Oil Co.'s No. 3 Hodges is drilling around 3,500 feet. The Paraffine Oil Co.'s No. 62 Paraffine is drilling around 1,020 feet. The Peer Oil Corp.'s No. 1 Christian is driling at 2,927 feet. The Sun Oil Co.'s No. 75 Hooks is drilling around 1,330 feet. The Sterling Oil Co.'s No. 2 Hooks is drilling at 1,270 feet. The Gulf Production Co.'s No. 1 Smith is drilling at 2,250 feet. The Associated Oil Co.'s No. 2

Season's Greetings

Our fiscal year has ended and we are reminded, that, to our friends, whom we have tried to serve during the successful year just ended, we owe our thanks and appreciation for their generous patronage.

To you we extend our greetings and best wishes for a prosperous and happy New Year.

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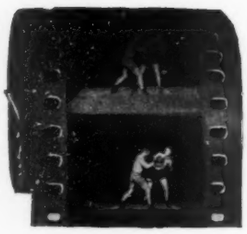

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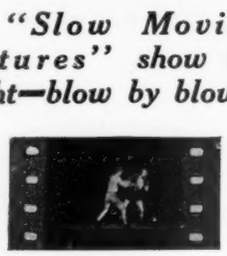

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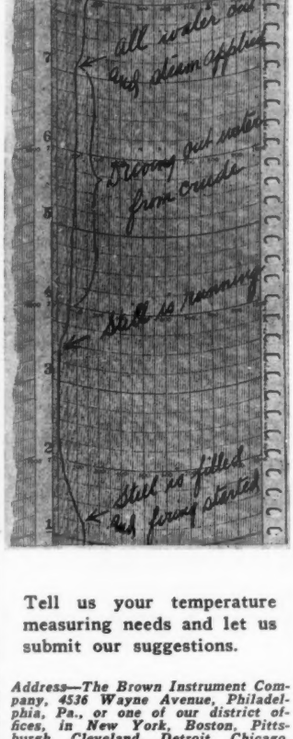

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PYROMETERS

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P. Settegast, at Pierce Junction, is drilling around 850 feet. H. R. Cullen's No. 7 Howe is rigging up to work over. The Gulf Production Co.'s No. 15 Taylor is rigging up to deepen.

The Gulf Production Co.'s No. 26 T. W. Davis, at Big Creek, is making dry gas at 3,300 feet; No. 18 is drilling at 3,325 feet. The Union Sulphur Co.'s No. 40 Davis is rigging.

The Humble Oil & Refining Co.'s No. 1 Wilson "B" at west Columbia, is drilling around 3,920 feet; No. 1 M. and W. is trying to get to bottom. The Texas Co.'s No. 22 Arnold is a derrick, waiting on rig. Gulf Production Co. will work over old wells on the underwood.

The Sun Oil Co.'s No. 8 Cade at High Island in Galveston County is perforating at 3,400 feet; No. 6 Cade "C" is fishing at 2,275 feet; No. 1 Smith is drilling at 750 feet. The Island Oil Co.'s No. 1 McCarthy is shut down at 2,260 feet. The Transbay Oil Co.'s No. 2 Tierman is shut down at 195 feet. The Gulf Production Co.'s No. 4 is drilling at 3,200 feet.

Hull and Orange Pools

In the Hull Pool, the Humble Oil & Refining Co.'s No. 19 Guedry is drilling around 1,750 feet; No. 4 Merchant is rigging up to work over. The Texas Co.'s No. 6 Hannah-Vacuum is making 175 bbls., 25 per cent water, on air at 3,580 feet. The Houston Production Co.'s No. 6 Abel is shut down at 2,170 feet. The Mecom Oil Co.'s No. 8 Taylor is fishing. The Yount-Lee Oil Co.'s No. 12 Merchant is drilling at 1,950 feet; No. 13 is drilling at 3,300 feet. The Gulf Production Co.'s No. 61 Phoenix is drilling around 1,800 feet; No. 62 is drilling at 1,000 feet; No. 63 at 100 feet; No. 21 Morris Phillips and No. 15 Baldwin are rigging up.

In the Orange Pool, the Kishi Development Co.'s No. 7 McGuire is drilling at 4,600 feet. The Orange Petroleum Co.'s No. 12 Chesson is building standard rig at 4,650 feet; No. 9 Winifree is milling at 3,175 feet. The Rycade Oil Corp.'s No. 13 State "B" is drilling around 4,300 feet; No. 14 is drilling around 3,160 feet; No. 4 State "E" is fishing at 4,600 feet. The Sun Oil Co.'s No. 1 Johnson and others, is fishing at 4,740 feet; No. 3 Belile is drilling deeper around 4,730 feet. The Sinclair Oil & Gas Co.'s No. 1 Turner is drilling at 3,800 feet. The Tillery Oil Co.'s No. 2 State is drilling around 4,600 feet. The Continental Oil Co.'s No. 1 Chesson is drilling around 4,260 feet; No. 7 is shut down at 3,015 feet; No. 10 is rigging up to work over. The Edgerly Petroleum Co.'s No. 1 Carbello "B" is swabbing at 3,375 feet. The Humble Oil & Refining Co.'s No. 25 Chesson "B" is rigging up; No. 24 is drilling around 4,450 feet; No. 26 is a derrick; No. 1 Barber is drilling at 4,500 feet.

Goose Creek Drilling

In the Goose Creek Pool, the Gulf Production Co.'s No. 19 J. Galliard is drilling around 3,000 feet and No. 11 Chapman-Bryan below 1,875 feet. No. 30 Beaumont is working over at 2,380 feet and No. 10-A Wright is rigging to drill deeper. The Humble Oil & Refining Co.'s No. 12 Smith is deepening and No. 66 is rigging. No. 4 Harrell is around 4,800 feet. No. 30 Galliard Peninsula is drilling around 3,565 feet. The Powell Oil Co.'s No. 6 Bryan is drilling deeper at 4,455 feet. The Gulf Coast Oil-Crown Petroleum Co.'s No. 39 Galliard is being worked over. The Sun Oil Co. has a derrick up for No. 15 Bartlett-Smith.

In the South Liberty Pool, the Gulf Production Co.'s No. 5 Antoine is drilling around 3,100 feet. The Coastal Oil Co.'s (formerly East Texas) No. 1 LeCoure is drilling around 1,535 feet.

The Houston-Gulf Gas Co. has a derrick up for No. 1 Gray at Markham and Mills Bennett has a location at Barbers Hill.

Coastal Wildcats

A few more wildcat tests are starting, replacing some of those abandoned during the past two weeks. The Texas Co. is rigging another deep test east of Green Bayou in Harris County, and Phillips and associates have a location at North Houston, 7 miles from the city. Armstrong and associates are rigging near the San Jacinto battlefield, where Texas gained its independence from Mexico and became a Republic in 1836. The scene of the battle is now a State park facing on the Houston ship channel.

Wheatley and Bush's No. 1 Spear is starting in Liberty County. The Gulf Production Co. is rigging Nos. 7 and 8 Davis at Long Point Dome in Fort Bend County. The Houston Oil Co. has started No. 3 Rooke in the gas district in Refugio County.

Geophysical testing with the seismograph and torsional balance are being made in the northern part of Harris County, the western part of Brazoria and eastern section of Matagorda Counties. The Gulf Co. leads in geophysical exploration work. The Humphrey Corp. is making geophysical tests in Wharton County, west of the Boling Dome.

In Liberty County, the Humble Oil & Refining Co.'s No. 1 Welder is drilling around 2,700 feet. The Old Colony Oil Co. is drilling No. 11 in the old North Dayton Pool.

In Jefferson County, the Gulf Production Co.'s No. 4 Thomas at Fannette, is below 4,300 feet. At Big Hill Dome, the Houston Oil Co.'s No. 4 Sun-Davis is drilling around 2,900 feet and No. 1 Sun-Dyson is at 2,710 feet.

In Fort Bend County, the Gulf Production Co.'s No. 5 Moore at Orchard Dome, is around 3,785 feet. The Marland Oil Co. of Texas' No. 5 Lockwood is drilling at 4,546 feet. The P. A. Nelian, Inc.'s No. 2 Frederick is below 2,400 feet. Schulte and others well at Richmond is around 3,000 feet. The Rycade Petroleum Corp.'s No. 4 Wisdom is drilling in hard sand at 1,115 feet. No. 5 Nash is below 3,935 feet. No. 5 Wisdom, across the line in Brazoria County, is drilling around 1,525 feet.

The Retrieve Oil Co.'s No. 1 Westheimer, on the Humble highway, north of Houston, is drilling around 3,530 feet. The Texas Co.'s No. 4 Mack Miller is at 3,470 feet.

In Chambers County, C. T. Rucker's No. 1 Fisher is below 2,745 feet. No. 1 Lawrence spudded in and shut down. At Boling Dome, in Wharton County, The Texas Co.'s No. 3 Taylor is drilling around 3,600 feet and No. 1 Schoelman is below 655 feet. Rich and Humphrey's No. 1 Dennis, 12 miles west of the dome, is below 700 feet.

In the Orange Pool, the Humble Oil & Refining Co.'s No. 19 Chesson came in flowing 3,000 bbls. around 4,700 feet. This makes the total completions there during the week number five, with 4,650 bbls. new production.

On the north side of the Humble Pool, F. M. Long's No. 5, is a 50-bbl. pumper around 2,800 feet. The Texas Co. has made locations for Nos. 1 and 2 fee, offsetting Sutherland and others' recent 75-bbl. well on the south and east.

J. R. Cheek has leased 7,500 acres near the Gulf of Mexico in the southern part of Jefferson County, giving a bonus of $3,500 for a nine months' exploration contract. Geophysical tests will be made.

Miscellaneous

The Magnolia Petroleum Co. reports runs of 87,451 bbls. from the Luling Field during the month of November. The United North & South Oil Co. got a 1,000-bbl. well initial flow in No. 19 McKean on the Guadalupe County side of the field. It is the first big well in one year. No. 14 Rios is drilling on the Caldwell County side.

The runs from the Lockhart Field by the Magnolia Co. were 179,173 bbls. during November. The same company ran 53,644 bbls. from the Laredo districts during that month. The Cole Petroleum-Houston Oil Co.'s No. 11 Benavidas is a 50,000,000-foot gasser. No. 12 is drilling in. The Moody-Seagraves Co. abandoned No. 1 Laurel at 2,028 feet.

The Crown Central Petroleum Corp. is starting a drilling campaign in Arkansas, Oklahoma and Kansas. The company now has production in the Coastal pools and in the Laredo districts, with a refinery in Houston. Three of the proposed wells will be drilled in the Smackover Field, one at Sand Springs, Okla., and more in Greenwood County, Kansas, on a 320-acre lease. Section 13-26-9. Thirty locations have been made in Greenwood County.

NEW MEXICO FIELDS

(Continued from Page 34)

Co. is also completing another producer, No. 5 on the McQuigg Brothers lease, in Section 4-18-28.

One of the best producers in the field has been completed in the north extension by the Pueblo Oil Co., No. 2, in Section 4-18-28. This well has been producing at the rate of 250 bbls. daily since completion. No. 4 on the same lease gives indication of being an even better producer, now standing 1,800 feet in fluid following a shot of 120 quarts.

To the east of the field, the Cheesman, Ballard & Clark No. 1 on the Massey permit, is drilling at 2,525 feet, having had another showing. To the southeast, Snowden & McSweeney are carrying their No. 1 on the McNutt permit, in Section 4-21-30, down, now drilling at 4,287 feet.

Eighteen miles west of Artesia, the Hope Development Co.'s No. 1 Fite is underreaming the 12½-inch casing at 1,130 feet. Work has been resumed on the Manning Dome well of the Arkansas Gas & Fuel Co. at 2,400 feet. The Magnolia Petroleum Co. has also entered the Manning Dome country, purchasing Section 6-16-17.

Drilling Report

George Bobb's No. 3 Thompson permit, Section 18-17-28, drilling at 547 feet; No. 4, Section 19-17-28, cleaning out after shot at 636 feet; Beeson's No. 1, Section 33-17-30, setting casing at 500 feet; Cheesman, Ballard & Clark's No. 1, Section 21-18-29, drilling below 2,520 feet; Colorado Drilling Co.'s No. 1 Irvin, Section 8-16-27, drilling at 850 feet; Cook Ironsides and others, Section 10-20-29, shut down, preparing for deep test; Compton's No. 1, Section 16-18-28, drilling at 2,750 feet; Danciger Oil & Refining Co.'s No. 1 Daugherty, Section 4-18-28, cleaning out; Danciger's No. 1 Bookman, Section 4-18-28, drilling below 1,850 feet; Empire Gas & Fuel Co., Section 31-24-27, spudded in on a 3,000-foot contract. This test is in south Eddy County. Flynn, Welch & Yates' No. 30, Section 21-18-28, location made, No. 31, Section 21-18-28, drilling at 1,800 feet; No. 32, Section 28-18-28, on production; No. 34, in Section 29-18-28, on production; No. 35, in Section 29-18-28, drilling below 900 feet; No. 37, Section 17-18-28, drilling at 500 feet. Dunn's No. 2, Section 11-18-28, cleaning out; Frontier Petroleum Co.'s No. 1 McQuigg Brothers, Section 4-18-28, on production; No. 5 drilling in; Hope Development Co.'s No. 1 Fite, Section 4-18-23, underreaming at 1,130 feet; Kersey, Conrad & Levers' No. 1, Section 18-18-28, cleaning out after shot; Lane and others, Section 22-16-28, no report; Levers Carper's No. 1, Section 3-18-28, drilling below 1,750 feet; Maljamar Oil & Gas Corp.'s No. 14, Section 28-18-28, rigging up; No. 15, Section 28-18-28, rigging up; McFrederick-Eppenauer's No. 1, Section 15-19-25, drilling; Ohio Oil Co.'s No. 1 Tracy permit, Section 34-21-26, drilled to 4,960 feet, preparing to set pipe; Ohio Oil Co.'s No. 1 McCullough permit, Section 1-20-27, shut down at 2,955 feet; Ohio Oil Co.'s No. 5 New State, Section 4-18-28, on pump; No. 6 on the Toomie Allen lease, Section 28-18-28, topped oil sand at 2,765 feet; No. 2 New State, Section 4-18-28, drilled to 2,350 feet, on pump; No. 6 New State, Section 4-18-28, drilling at 2,225 feet; No. 1 Keiser, Section 16-18-28, drilling at 1,000 feet; No. 2 C. J. W., Section 17-18-28, drilling at 2,200 feet; Pioneer Oil & Gas Co.'s No. 1, Section 36-20-30, shut down; Pueblo Oil Co.'s No. 2, Section 4-18-28, on production; No. 3, Section 4-18-28, drilling below 1,950 feet; No. 4, Section 4-18-28, setting 6⅝-inch casing; Quillin & Dunnett's No. 1, Section 27-18-28, shut down; Snowden & McSweeney's No. 1, McNutt permit, Section 4-21-30, drilling at 4,287 feet; Twin Lakes No. 6, Section 28-18-28, drilling deeper at 2,210 feet; V. F. K. Oil Co.'s No. 6, Section 17-18-28, drilling in; Williams Petroleum Co.'s No. 3, Section 17-18-28, drilling at 1,375 feet; No. 2, Section 17-18-28, spudded in.

Flynn, Welch & Yates' No. 38, Section 3-18-28, location made.

Chaves County

Arkansas Gas & Fuel Co.'s No. 1 Man-

ning Dome, in Section 14-15-17, drilling below 2,400 feet; Colorado Gas & Fuel Co., Section 16-8-27, drilling below 3,625 feet; Coontail No. 1, Section 28-15-23, fishing for casing; Dresser No. 1, Section 24-10-27, drilling below 2,800 feet; Southern Exploration Petroleum Co., Section 15-15-29, drilling at 2,400 feet; White Oil Co.'s No. 1 Franks, Section 25-10-26, drilling below 1,400 feet; New State Petroleum Co., Section 27-10-26, drilling below 1,400 feet; New State Petroleum Co., Section 27-10-26, drilling below 1,100 feet; Neal and others, Section 25-9-25, underreaming at 950 feet; Lewis and others, Section 13-8-24, shut down.

Lea County

Covert and others, Section 15-21-33, drilling below 550 feet; Maljamar Oil & Gas Corp.'s No. 1, Section 21-17-32, drilling at 350 feet; W. A. Wyatt No. 1, formerly Fenton No. 1, Section 19 16-34, no report; Ross No. 1, Section 27-10-32, setting 8-inch casing.

OKLAHOMA FIELDS

(Continued from Page 36)

the following rigs up: No. 1 Bright, SE cor. SE, Section 14-19-4, and No. 1 Ellis, NE cor. NE, Section 23-19-4.

Muskogee County

The Herbert Oil Co. has a gas well in No. 1, SW cor. NE, Section 14-13-18. The hole had a total depth of 1,800 feet and was plugged back to sand 764-780 feet and shut in with 8,000,000 feet of gas.

Lincoln County

In the Davenport Field, the Southwestern Petroleum Co. and the Selby Oil Co. have completed No. 9, NW cor. SE SE, Section 3-14-5. Sand was 3,316-3,385 feet and the well made 150 bbls. naturally and 225 bbls. after a shot. Southwest of the field, the Magnolia Petroleum Co. has a dry hole in No. 1, NE cor. NW SW, Section 8-14-5, which is abandoned at a total depth of 3,875 feet. The rig is up for a twin well, No. 1-A, NE cor. NW SW, Section 8-14-5. Shaffer Oil & Refining Co. has a small well in No. 1, NE cor. NE, Section 10-14-5, which is good for 42 bbls. on the swab after a shot of 15 quarts in sand 3-353-3,422 feet. It is not completed. Pure Oil Co.'s No. 3, SW cor. SE SW, Section 35-15-5, had the sand 3,309-3,375 feet and made 400 bbls. naturally and 507 bbls. after a shot of 30 quarts. No. 4, SE cor. SW SW, Section 35-15-5, found the pay 3,324-3,381 feet and was shot with 30 quarts. The hole bridged and is being cleaned out. The well made 305 bbls. before the shot.

In the Skelly-Ford area, the Phillips Petroleum Co. is building the rig for No. 1 Kilgore, NW cor. SW, Section 8-15-6.

Osage County

Phillips Petroleum Co. has spudded No. 1, SW cor. NE SW, Section 28-25-9. Peters and others have spudded No. 3, SW cor. NE, Section 32-24-9. Winona Oil Co. has rigged up a machine for No. 18-A, CNL SW SE, Section 28-24-10.

Forty-five Oil Co.'s No. 39, CNL SW NE, Section 5-25-12, had sand 1,627-1,653 feet and is estimated at 25 bbls. after a shot of 120 quarts. It is being cleaned out and is not completed. Roxana Petroleum Corp. and Teslos have spudded No. 2, CWL SE, Section 1-24-11.

In southern Osage, Meridian Petroleum Co.'s No. 7, C S half NW NW, Section 18-22-9, had the top of the lime at 2,305 feet and the Wilcox sand 2,575-2,577 feet with 1,000 feet of oil in the hole. It is not completed. Branstetter and others' No. 1, CEL NE NW, Section 23-22-11, had sand 1,697-1,737 feet and was shot with 240 quarts. It is estimated at 10 bbls. and is not completed.

The Barnsdall Oil Co. is starting to drill an old well deeper in No. 21, NW cor. SE NE, Section 30-21-9. It is drilling at 2,360 feet. Devonian Oil Co. is drilling at 300 feet in No. 4, CEL SE NE, Section 10-21-10. Kewanee Oil Co. has a small well in No. 7, CSL SW SW, Section 19-21-12. Sand was 1,393-1,445 feet with a total depth of 2,168 feet. The well was plugged back to the upper sand and shot with 60 quarts. It is making 10 bbls.

Elliott & Smith have another well in the region where they completed the huge well two months ago. It is No. 20, NW cor. NW, Section 30-21-12, and had the sand 2,034-2,048 feet. It made 50 bbls. originally and is now making 35 bbls. Pioneer Petroleum Co.'s No. 4, NW cor. SE NW, Section 5-20-11, had the Oswego lime dry from 1,235-1,285 feet and is drilling at 1,450 feet. Superior Oil Co. has a rig on the ground for No. 1, CSL NW NE SW, Section 29-20-11. Grimes & Lancaster have a gas well in No. 7, CSL NW NE, Section 11-20-12. Oswego lime was found 746-754 feet with 50,000 feet of gas. The well was drilled to the Mississippi lime at a total depth of 1,994 feet where a hole full of water was encountered. It was plugged back to the upper sand and the gas saved.

Pawnee County

Mid-Kansas Oil Co. has a dry hole at 3,680 feet in No. 1, SW cor. NW NE, Section 4-23-5. Magnolia Petroleum Co. has spudded No. 3, SE cor. NE SW, Section 16-20-6. Mid-Continent Petroleum Corp.'s No. 6, SW cor. SW, Section 36-21-7, has sand 2,673-2,677 feet and made 50 bbls. the first 8 hours. It is a twin well. Mid-Continent Petroleum Corp.'s No. 14, SE cor. SW SW, Section 16-20-7, had the Skinner sand 2,629-2,647 feet and is showing for 30 bbls. after a shot of 10 quarts. Minnehoma Oil Co.'s No. 3, CEL NE NW, Section 7-20-8, had sand 2,505-2,573 feet with 150 feet of oil in the hole. It may be shot. Selby Oil & Gas Co.'s No. 5, NE cor. SE, Section 23-20-8, had sand 2,811-2,817 feet and is making 75 bbls. after a shot of 20 quarts. C. L. McMahon's No. 6, NW cor. SW, Section 24-20-8, had sand 2,801-2,813 feet and made 70 bbls. of oil and 50 bbls. of water. It was plugged back to 2,810 feet and is making 50 bbls. of oil and 20 bbls. of water.

Washington County

C. M. Hawk's No. 1-A, SE cor. NW, Section 1-22-13, is dry and abandoned at 1,335 feet. A. E. Streeter and others have spudded No. 1 Mitchell, SE cor. NE SW, Section 11-22-13. J. H. Middleton's No. 1, SE cor. SE, Section 23-22-13, had 300,000 feet of gas in sand 1,272-1,278 feet, the top of the Mississippi lime at 1,278 feet and is drilling at 1,365 feet.

OIL OPERATOR LOSES INCOME TAX APPEAL

PITTSBURGH, Pa., Dec. 12.—Judge W. H. S. Thomson, in Federal Court dismissed a bill filed by Jesse C. McDowell, oil operator, to restrain D. B. Heiner, collector of internal revenue, from collecting by warrant of distraint, additions to McDowell's income taxes for the years of 1913 to 1919, both inclusive, amounting to $217,999.47.

Judge Thomson stated that McDowell filed his individual taxes for the various years, and paid the taxes computed by himself. The returns of each year were said by the Commissioner of Internal Revenue to be intentionally false and fraudulent. Additional taxes were then assessed.

McDowell refused to pay the additional taxes and the commissioner levied a penalty of 100 per cent of the amount of the additional taxes against McDowell. Other penalties of 5 per cent were added later by the commissioner.

McDowell averred that the levying of 100 per cent of a penalty implies crime and that he has the right to be tried by a jury.

When Collector Heiner threatened to seize the property and sell it to recover the money alleged to be due McDowell brought suit to enjoin him.

In answer to McDowell's statement, Judge Thomson says:

"It is one thing to charge a party with a crime. It is a wholly different thing to charge the existence of facts as the basis for the enforcement of a penalty by civil suit, or the action of administrative officers, although such facts may constitute a crime. Money penalties may be sued for and recovered in civil actions, and criminal prosecution is not necessary."

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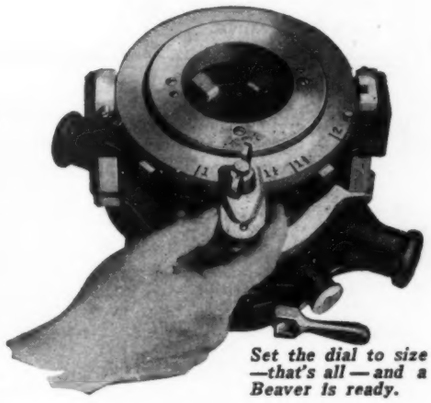

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NEW TEN-YEAR lease. 337 acres less than 2 miles from Prairie well showing oil at 2,155. M. F. Beaumont, Hartley, Tex.

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FOR SALE—200 acres in fee simple, with an undivided one-fifth interest in 980 acres, located on the Great Brazil Anticline, near deep drilling well, will accept 20 per cent of purchase price cash, balance, without interest, from oil and gas production. Do you know that Oklahoma's new wealth is over a billion per year? For information write E. L. Cooper, 506-7 Commerce Bldg., Kansas City, Mo.

FOR QUICK drilling contract, 875 acres near Ponca City, Okla. Proven territory. Very advantageous terms to parties who want production. Producer, P. O. Box 1325, Houston, Tex.

LEASES—PRODUCTION

OIL MEN, LISTEN

We need money for further development, we will sell a part of our East Cross Cut lease holdings at a bargain. Address Douglass Land Co., Cleburne, Tex.

OKLAHOMA

For sale—60 acres prospective oil land. 9 miles Ardmore, near Berwyn, Okla.; all tillable; fine for pecan orchard or dairy farm; $35 an acre. Jess Akers, Breckenridge, Tex.

FOR SALE in fee, 2,204 acres Southeast Archer. Small well on one tract, offset by a 20-bbl. well at 562. Price, $35 per acre in fee, the owner reserving one-fourth mineral.

STEHLIK & BABER
Wichita Falls, Tex.

FOR LEASE—Oil and gas, west half southwest quarter Section 16-15-8, Creek County; also 44 acres, lots 4, 5 and 6, Section 9-6-9, Hughes County, Oklahoma. Wheeler, owner, Box 464, Vincennes, Ind.

NINE surveys, containing 5,120 acres, 10 miles west of Fort Stockton, Pecos County, Texas. Said to be good oil formation. L. S. K., P. O. Box 818, Plainview, Tex.

I OWN 20-acre oil lease, being 20 acres in the SW corner of Section 3, Block B-4 in Hutchinson County, Texas, only short distance from Gibson oil well in Section 62, Block 46, and there have been two other locations made in the Mary Whitney close up to my leases; also there is to be five wells drilled in Section 6, Block B-4, joining me on the south and I was told that the location for one of these would be made in few days just 330 feet south of my lease. This lease is short distance from Twin Six well, reported to be making 1,000 bbls., and also other good wells. I am located in the very best part of the field, land in the same section as my lease owned by Waite Phillips and others. Am also told that the Gulf has made location near this lease. Look on your map and see what they are doing around this lease and let me known what kind of a proposition you will make me to drill this lease with an overriding royalty and I will consider your proposition.

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HAVE BUYERS for flush or settled production in Oklahoma and North Texas. Vern R. Hartman, P. O. Box 442, Dallas, Texas.

UTAH is fast coming into her own as an oil producing state. Crescent-Eagle well standing 4006 ft. in oil, the Midwest test at Moab at 1990 ft. with 3,000,000 cu. ft. wet petroleum gas and spraying oil heavily. Both are expected to come in before Christmas; can still locate you on a few choice claims of Government land, 2560 acres. Send for valuable holdings where next big oil boom is now assured and that very shortly, watch the papers, and write today or wire Harry E. Rose, Oil Operator, 343 East First South St., Salt Lake City, Utah.

THIRTY-FIVE HUNDRED acres leased in good block in producing trend, Grady County, Oklahoma. Will give 85 per cent this acreage for well. Also have many good leases and royalties in high grade fields priced right. Write Midcenter Development Co., First National Bldg., Chickasha, Okla.

LEASE offering extraordinary. Test wells and Tortion balance now operating in search for oil on my two blocks, leases both sides Colorado River near Wharton, Wharton County, Texas. Geologists reports favorable, major companies have bought protection leases. Limited number leases for sale in midst operations. For particulars write, wire or phone, James W. Rich, Oil Operator, 401-2 Bankers Mtg. Building, Houston, Tex.

LEASES—PRODUCTION

FOR PANHANDLE oil leases and drilling contracts, write Dr. W. R. German, Canadian, Tex.

IN ARTESIA, N. MEX., FIELD

Have few leases on structure, 1 to 5 miles McFrederick-Eppenauer deep test in 15-19-25. $5 to $25 per acre. This test 14 miles southwest main pool; in line production; Eddy County's best bet for extension; big companies in. Write or wire, Box 651, Carlsbad, N. Mex.

600 ACRES producers 88 leases, 25-cent rentals, not due for six months, and a one-third interest in well down 305 ft., with good showing of gas at 216 ft. Well being drilled on 10 acres to go 2,000 ft. or get production. Will assign above leases and interest for $7,000 and I will finish the drilling. Write or wire J. E. Rodgers, San Marcos, Tex.

FOR SALE—Half interest in 80-acre lease containing 1,194,800 bbls. recoverable oil by mining system. Conditions for mining ideal. Cost of installing mining equipment about $200. Cost of raising and delivering oil to pipe line after installation of mining equipment about 3 cents per barrel. Oil now produced from lease through pumping wells brings $1.70 per barrel. For details address P. H. Lund, Petroleum Engineer and Geologist, 533 Palace Building, Minneapolis, Minn.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.55	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

Compute white space at the above rates
Mail your advertisement to

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

170,000 ACRES

15-16 mineral fee, blocked solid. U. S. Geological Survey, on formation and structure, reports Permian exposure, dome structure. Shallow to Pennsylvanian. Very favorable to oil and gas production. Artesia, New Mexico, region, across the line in Texas. Price $510,000. P. O. Box 625, Dallas, Tex.

WILL DISPOSE of half interest in 50-acre proven shallow lease with production that can be increased to 3,000 or 4,000 barrels oil per month with a total outlay of $35,000. Present income from lease about $1,150 per month. P. H. Lund, Petroleum Geologist, 533 Palace Building, Minneapolis, Minn.

ROYALTIES—PRODUCTION

J. F. MARION COMPANY

Magnolia Building
Dallas, Texas
Buys and Sells
Texas Royalties
"Ask Us First"

EQUIPMENT WANTED

WANTED—A 28 or 30 Star Machine and full string of tools; must be in good condition, ready to go, and cheap. Address, giving list of tools and price, P. O. Box 1195, Sapulpa, Okla.

FOR SALE—EQUIPMENT

PIPE—TUBING—CASING

CASING AND OTHER EQUIPMENT FOR SALE

BARGAIN, WANT QUICK SALE

3,000 feet 6⅝" 26-lb.; 2,200 feet 8¼" 32-lb.; 1,200 feet 10" 40-lb.; 500 feet 12½" 50-lb.; 150 feet 15½" 70-lb.; also set 6-inch Oil Well rig irons, 6-horse Fairbanks gasoline pump, tanks and other equipment. Located near Kansas City Southern Railroad, 9 miles west of Hatfield, Arkansas. Communicate with O'Shaughnessy & Haun, Phone 52, Mena, Ark., or Blackwell, Okla.

FOR SALE—150 miles genuine wrought iron five-inch line pipe, fine condition. Tri-State Pipe Co., Box 282, Tulsa, Okla.

DRILLING OUTFITS

FOR SALE—Two No. 25 Stars, one with 26 engine, and one No. 26 Star, with 27 engine (made ten 1,200-foot wells) all three machines fully equipped with 6¼-inch to 8¼-inch tools, and 25 h.p. mounted boilers. Address H. C. Norris, Portland, Ind.

FOR SALE—One No. 27 Star drilling rig; No. 28 Star drilling rig; one generator; all above in good condition. Also 1,500 feet 4-inch pipe, been run once; 800 feet 6-inch pipe. Address H. B. Campbell Estate, Welch, Okla.

OIL COMPANIES, ATTENTION

For Sale—Complete drilling equipment for platting structures and wildcatting.

One Sullivan "N" Diamond Drill; 2,000 ft. "N" drill rods; 1,800 ft. "N" casing; 30 h.p. boiler, electric light plant and full equipment. Can be seen at work, Cumberland, Wyoming.

Two Sullivan "C" Drills, with 1,600 ft. "A" rods, boilers and full equipment; one drill mounted on truck.

One Sullivan "C.N." Drill complete, with 800 ft. of "N" rods; this drill also is mounted on truck.

All of these drills are fully equipped and in A-1 condition. Three of them can be seen at work.

EGILDSON BROTHERS CO., Inc.
509 Newhouse Bldg. Salt Lake City, Utah

FOR SALE—One Sparta drilling rig, special 30, with tools. One 500-bbl. Butler steel tank, almost new. Cheap. Write Earl Hummer, Chanute, Kans.

MISCELLANEOUS

FOR SALE—Gasoline tractor cleaning out machine complete, wire line and sand line and string of tools. Price, $900. Box 466, Chanute, Kans.

ELECTRIC MOTORS
Generators and Repairing
CENTRAL ELECTRIC CO.
712-714 N. Main Fort Worth, Tex.

FOR SALE—Two boilers 100 and 150 h.p., in good condition. Three condensor boxes 6x8x30. W. Bogart, Box 152, Burkburnett, Tex. Phone 136.

CRAGO CUT GEARS

Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

MISCELLANEOUS

SULLIVAN DIAMOND CORE DRILL & ACCESSORIES

Slightly used

One Sullivan class FK Diamond Core Drill, complete with 450 feet of ⅞-inch wire cable and lubricator. One complete set diamond setting tools. 4,215 feet K rods in 15 feet lengths. 720 feet unused K rods in 15 feet lengths. Various core barrels. Apply

F. P. SUMMERS

Standard Oil Co. (California)

225 Bush St. San Francisco, Calif.

FOR SALE

Model O Austin Trench Machine and Backfiller

L. W. KINNEAR, Inc.
1524 Clairmount Ave. Detroit, Mich.

CATERPILLAR TRACTORS
Immediate Shipment
6 Tons—$1500.00

THE SALES CORPORATION
Alexandria, Va.

ROTARY DEEP OIL WELL DRILLING BIT

Unbreakable, self-sharpening, continuous in drilling, cuts granite, full size; straight hole. 8-inch bit, $300. G. Griesche. Berkeley, Calif.

POSITION WANTED

WANTED connection with oil company. Prefer work where legal training would be an asset. Have wide acquaintance in Oklahoma and can furnish best of references. Salary $3,000 to start. Box B-61. The Oil and Gas Journal, Tulsa, Okla.

STENOGRAPHER—Secretary, young woman, well educated and refined, desires position with high-class individual or firm. Energetic, efficient and secretive about employer's affirs. Highest references. Box B-60, The Oil and Gas Journal, Tulsa, Okla.

SERVICE AVAILABLE—All around oil executive, experienced all phases exporting, domestic sales; capable assuming direction or development department or territory. Box B-62, The Oil and Gas Journal, Tulsa, Okla.

STORES EXECUTIVE — Thorough experience in California and Mid-Continent fields; practical, material man; accounting, salvage recovery, and kindred departments. U. S. or foreign. Box B-52, The Oil and Gas Journal, Tulsa, Okla.

CAN YOU use a man, 37 years old, who knows cracking, refining and salesmanship? Have worked from bottom up. Employed at present as refinery manager. Been in game since 1908. Desire interview. Box B-50, The Oil and Gas Journal, Tulsa, Okla.

FIELD MANAGER who has had several years' experience in charge of drilling and production operations desires position. Have had considerable experience in the geological and petroleum engineering departments. Am graduate engineer; age 32; possessing excellent references. Box B-42, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—REFINERIES

WONDERFUL OPPORTUNITY to buy or lease oil refinery. Write 17 Dunn, Great Falls, Mont.

ADDRESSES WANTED

IF ANYONE KNOWS the whereabouts of Fred W. Ranger, please communicate with 1025 Cherry, Kansas City, Mo.

ANYONE knowing the whereabouts of Mr. Volney Boshak, age 21, will do a great kindness by notifying his brother, Russel Boshak, at Morsvia, Iowa.

HELP WANTED

EXECUTIVE, ENGINEERS, $3,000-$25,000, find our individual, confidential service effective in making new connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Jacob Penn, Incorporated, 305 Broadway, New York City, N. Y.

WANTED

WANTED—Marginal contract on gasoline for the year 1926. Contract to be based on the average tank wagon price (Standard of Louisiana) as published in the National Petroleum News. In Nashville, Memphis, Chattanooga and Knoxville, Tenn. Gasoline for the months of January, February, March, April, October, November and December shall grade 58-60 N N or better, the balance of the year we will accept 56-58 450 end point goods. Shipments to start the first week in January and to be at rate of 35 to 40 cars per month. If interested write
TENNESSEE PETROLEUM CO.
Nashville, Tenn.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.55	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

Compute white space at the above rates

Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

WANTED DRILLING PROPOSITIONS

Will drill test well on well located acreage with good geology. Submit with full particulars to Steiner Oil Co., 347 Harvey Snider Bldg., Wichita Falls, Tex.

WANTED RELIABLE CONTRACTOR

To drill for interest, two blocks, favorable geology. Rig, tools and casing furnished. Box B-40, The Oil and Gas Journal, Tulsa, Okla.

WANTED—To buy or develop shallow proven acreage, or buy producing royalties. Give full particulars on yield of wells, etc. Box B-37, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Practical man with $25,000 to start $1,000 per day net copper production. A. L. Jones, Brownwood, Tex.

WANTED TO BUY—Small production or old leases ready to be abandoned. Unger Brothers, phone 1894, Muskogee, Okla.

WANTED—Producing ropalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

SCHOOLS

BOARDING SCHOOL FOR GIRLS—Elfindale in the Ozarks, conducted by Sisters of the Visitation, Springfield, Mo. Write for catalog.

ORCHARD AND FARM LANDS

5 TO 20,000 ACRES of good rich land, prices soaring, all smooth. Artesian wells flowing pure water on some of this land. Adjacent to Stanton County, Kansas. This locality produced 40 bu. of corn per acre this year. Price $12.50 per acre. Wm. Haver, Box 491, Dodge City, Kans.

FOR SALE IN NEVADA

Well-stocked sheep and cattle ranches. Good range and lambing ground, well watered, fully equipped. Write D. McElroy, 201 F & M Bank Bldg., Reno, Nev.

ACRES, 40 — Improved; Nemaha County, Kansas; in corn; near school; lies good; offered for quick sale at $3,000. Tinklin, Atchison, Kans.

CHOICE farm lands on monthly payments; send for list. C. H. Martin, Doniphan, Mo.

FOR SALE—Cattle, ranches, sub-irrigated farms; we grow everything grown in temperate zone; wheat, truck, alfalfa, fruit; pure water; healthy climate. Robt. Newberry, Laverne, Okla.

STOCK FARM—640 acres, 200 cultivation, 300 more tillable, good terms. Box 356, Miles, Tex.

940 ACRES—Soil 20 feet deep; 700 cultivated; splendid improvements; 14 mules, 70 cattle, tractor, implements; farms 80 acres up, $25 to $50 acre; act quick. Sanderlin & Elliotte, Memphis, Tenn.

WESTERN CATTLE RANCHES at less than liquidated prices. Range conditions better than for years. Industry picking up. Good investment. Paul Jette, Tularosa, New Mexico.

BUSINESS OPPORTUNITY

REDUCE THE COST of your inquiries by using our original inquiry letters. Millions of letters to rent; all classifications. Bailey Letter Co., 4635 Calumet, Chicago, Ill.

MAN OF MEANS to cooperate with and finance leasing or development for Texas geologist who has geology on several structures; formerly with U. S. Geological Survey. Box B-36, The Oil and Gas Journal, Tulsa, Okla.

FLORIDA PROFITS—Fabulous profits are being made in Palm Beach real estate. We have several lots near Singer's Blue Heron Hotel in Palm Beach Ocean development. Small cash payments. Also listings on houses and business property. References furnished. Austin Cunningham, Inc., Office 10 El Verano Hotel, West Palm Beach, Fla.

STOCK SELLING

Corporations desiring capital for promotion, development or expansion are invited to communicate with the undersigned.

Courteous consideration; prompt action; established reputation, complete facilities for campaigns of any size.

WILLIAM R. THURSTON

33 West 42nd St. Telephone
New York City Longacre 4900

LOANS made on producing oil properties. Jo H. Cable, Petroleum Engineer, Mid-Continent Bldg., Tulsa, Okla. Phone 2-7962. Brown Bldg., Wichita Falls, Tex., Phone 7089.

NEED CAPITAL?

Sell stock in your company quickly and economically. Worthy enterprises only.

NORTHCLIFFE CORP.
25 West 43rd St. New York, N. Y.

NOTICE

You know that mineralogy is not new, but was not perfected until now. I can tell you the approximate depth and quantity of your oil or gas or salt water with my new system. Address John Henizman, Box 432, Muskogee, Okla.

BUSINESS OPPORTUNITY

FOR SALE—Ownership lists of Reeves and Loving Counties, Texas. V. A. Thompson, Pecos, Tex.

CHOICE Paper Shell Pecans for sale. Buy direct from the grove and save middle man's commission. We have three grades, largest 75 cents; second grade 50 cents, and third grade, 35 cents.

A package of pecans makes a fine Christmas gift. Our prices are f.o.b. Vicksburg, and remittance must accompany order. No order less than five pounds. Address N. Vick Robbins, Vicksburg, Miss. Refer by permission Citizens National Bank, Vicksburg, Miss.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 35 E. Tenth, Oklahoma City, Okla.

FOR SALE—DOGS

GERMAN POLICE PUPPIES ready for Christmas delivery. Wolf gray and black and tan. All papers furnished. Price, $30. E. C. Pilgrim, Okmulgee, Okla.

LIVER AND WHITE Pointer, male, Commanche Frank breeding. $75. G. B. McDaniel, Michigan Valley, Kans.

BEAUTIFUL registered bull pups $15. Bulldogs. 501 Rockwood, Dallas, Tex.

FOR SALE—Registered German police pups and grown dogs, $25 and up. John Aarestad, McHenry, N. Dak.

POLICE PUPPIES — 3 months old, very fine specimens; excellent pedigree; prices reasonable. Write Bon-Air Kennels, R. R. 5, Box 136, Independence, Mo.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone send for blank form
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.

LANCASTER & ALLWINE
240 Ouray Bldg. Washington, D. C.

PATENTS

INVENTIONS financed, cash or royalty. Years experience by man who popularized famous Clymer spotlight. Bank and inventor references. Booklet free. Write Clymer, Denver, Colo.

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

LETTERHEADS—PRINTING

CONSUMERS' LEDGERS

We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

INCORPORATIONS

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

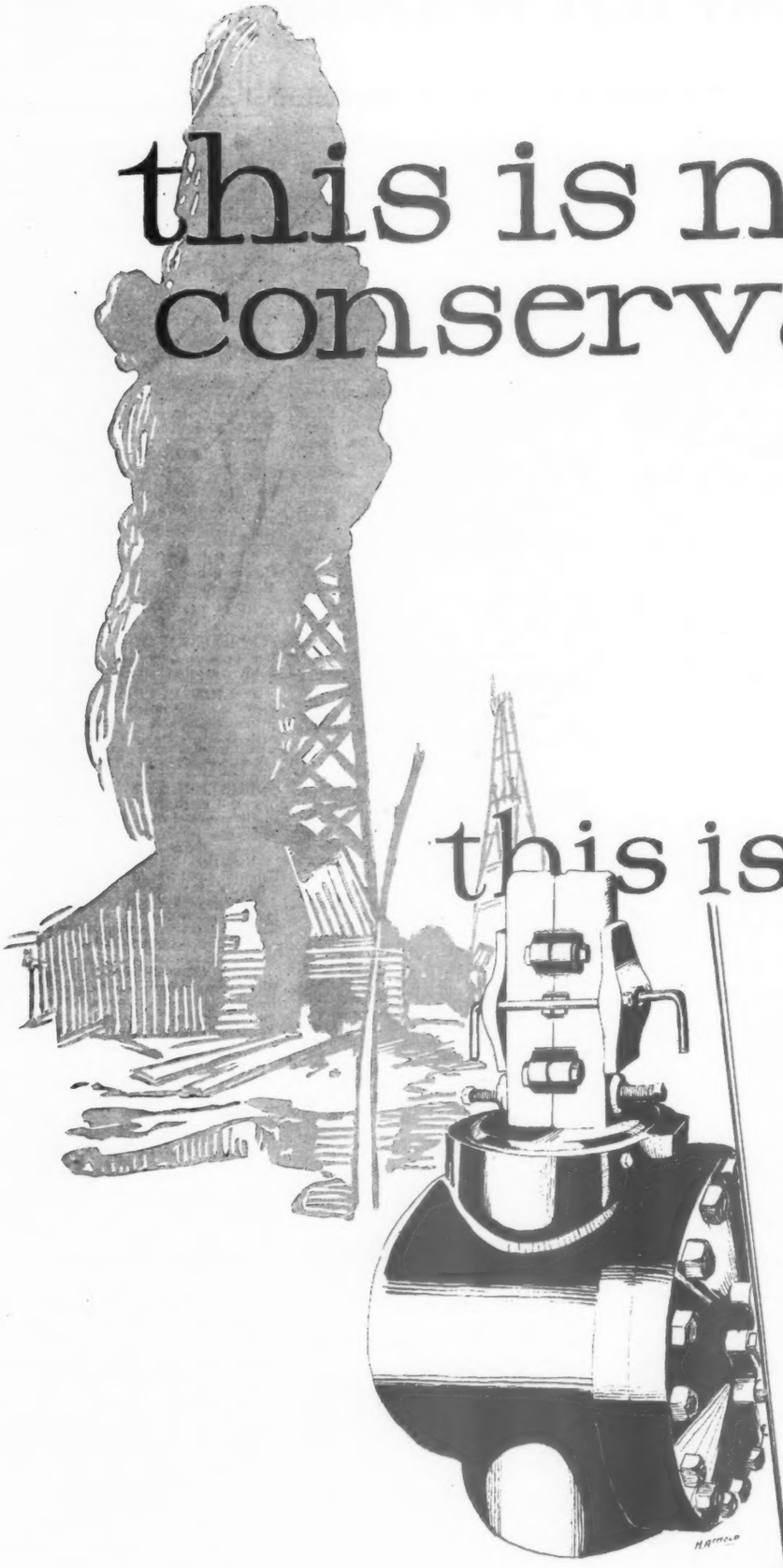
DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

MAIL LISTS

99% MAILING LISTS

Stockholders, investors, individuals, business firms for every need and want, guaranteed-reliable and individually compiled, so that every list is a fresh one. Standard charge $5 per thousand. There is no list we can't furnish, anywhere. Catalogue and information on request.
NATIONAL MAILING LIST CO.
22-A William St. Newark, N. J.

this is not conservation



this is

THOUSANDS of gallons of oil thrown into the air and scattered over the country side.

A slimy, greasy film of oil, fouling derricks, machinery and the surrounding land, and making life miserable for the workers.

Hundreds of dollars blown up and scattered to the winds for lack of a little foresight and ordinary care.—This is not conservation.

A few dollars spent to save a great many.

A huge volume of waste turned into profit and extra production.

A sentinel on your well night and day to increase your effective output and protect your interests—to give you what may be the margin between success and failure.

An Oil Saver and Control Casing Head on your well.—*This* is Conservation.

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

CONVENTION MONTANA OIL AND GAS ASSN.

(Continued from Page 23)

"The greatest needs of the hour in the industry are the facts of the industry properly assembled, analyzed, coordinated, disseminated and interchanged. The theories proved false or true; information worked out by the geologist, petroleum, chemical or mechanical engineer; experiences of the superintendent, foreman, driller and pumper; facts disclosed by proper accounting methods; problems solved and to be solved by the transporter, refiner and marketer; all these agencies and not any one individual or company, possess the 'master key' to the success of the industry. But their information and experience are but partially serviceable unless it is assembled, classified, analyzed and interchanged.

C. H. BROWN
Vice President Representing Marketers

"It is this work that is the function of the many oil and gas organizations, trade journals, institutes, chambers of trade and Government agencies.

"The problems that can better be handled by the group than the individual multiply in many directions, such as correction of matters of trade practices and predatory competition, correction of unfair conditions, promotion of justice and fairness in business transactions, the building up of public relations, (one of the imperative needs of the hour), securing relief in matters of legislation, securing remedied legislation (one of the particular needs in this State); and many other matters wherein the association can represent the interest of the members with greater effect than is possible through individual effort. Many of the associations have many departments, highly paid technologists in different engineering work; statisticians, paid lawyers or other men working on problems for the common good of their membership."

Operations in Montana

J. R. Reeve, associate engineer of the United States Geological Survey, spoke on the possibilities of oil and gas production from lower sands being wasted by entering sands above the producing horizon, the stopping of drilling to prevent the entrance of water from horizons below the producing sand, lessening the amount of emulsion in the oil and the use of vapor tight tanks and the plugging of dry holes and abandoned wells in such a way that will prevent harm to producing wells.

Paul W. Ernst read a paper prepared by A. H. Sikes on the nautral gas resources of Montana. Frank Scotten, general manager of the Montana Power Co., read a paper on the lectrification of the Sunburst Field. H. C. Fowler of the Bureau of Mines followed with a paper on safety in the petroleum industry and Gov. J. E. Erickson of Montana made a short talk on the State and its possibilities.

At the final session a paper on accounts and taxation in the oil business was read by William B. Findley. H. Earl Clack spoke of the Montana oil marketer and Dorsey Hager, the well-known geologist, read a paper on the search for new oil fields in western United States. E. F. Flynn, vice president of the Great Northern Railway, talked of the railroad's contribution to the petroleum industry; C. A. Rasmusson on the new income tax and B. B. Brooks, former Governor of Wyoming and president of the Rocky Mountain Oil Producers Association, described the effect of the oil production in Montana on the Wyoming fields and markets. Frank R. Venable talked on the Pacific Northwest Commercial Industrial Exposition.

Resolutions Adopted

A policy calling for dissemination of complete information concerning the oil industry and the factors which influence the price trends in oil and petroleum products was adopted at the closing session.

The resolutions set out that every branch and phase of the oil industry should avail themselves of every means at their disposal to give out correct information to the end that the public may be fully informed. Every member of the industry was asked to make himself an educative force and to employ every consistent means to widen his sphere of influence and information in behalf of the association's policy.

The association approved the action of all Government officials, national and local, who devote their efforts to a reduction of governmental expenditures. Montana mining tax laws, enacted prior to the discovery of petroleum, are unfair when applied to the oil industry, the resolutions hold. It was set out that the mining laws were not intended as a means of taxing the oil industry. Special levies against gasoline and all automobile license fees "should, by right and justice, be expended on the highways of the State," the resolutions assert.

A. J. FINDLEY
Vice President Representing Producers

Supervision by the Bureau of Mines of oil operations on Government owned land was commended by the association.

The resolutions, introduced by a committee composed of Mark O. Danford, C. H. Brown, O. I. DeSchon, J. H. Stevenson and Guy Craig, were adopted in full.

Directors and Officers

Following a change in the by-laws, unanimously approved by the members, which provides for an increase in the board from 10 to 12 members, the nomination committee submitted 12 names and its recommendations were approved.

The new directors are:

Producers—E. B. Coolidge of the Homestake Oil Co., Donald Campbell of the Mid-Northern Oil Co. and A. Judson Findley of the Western Petroleum Co.

Refiners—L. B. O'Neill of the International Refining Co., A. E. O'Brien of the Lewistown Oil & Refining Co. and M. C. Henderson of the Sunburst Refining Co.

Marketers—C. H. Brown of the Arro Oil & Refining Co., C. W. Lansrud of the Continental Oil Co., H. Earl Clack of the H. Earl Clack Co., Henry Sample of the Hughes Oil Co. and R. J. Coughlan of the Westland Oil Co.

Publicity—O. I. DeSchon.

E. B. Coolidge of Lewistown, president of the Homestake Oil Co., was elected president, Mr. Findlay declining re-election. Vice presidents named by the board were:

Refiners—M. C. Henderson, Great Falls, general manager of the Sunburst Refining Co.

Producers—A. Judson Findley, vice president of the Western Petroleum Exploration Co.

Distributors—C. H. Brown of the Arro Oil & Refining Co., Lewistown.

Walter F. Brittan and A. D. Becker, both of Great Falls, were re-elected secretary and treasurer, respectively.

M. C. HENDERSON
Vice President Representing Refiners

The following were elected to the executive committee:

M. C. Henderson, Great Falls; C. W. Lansrud, Great Falls; C. H. Brown, Lewistown; A. E. O'Brien, Lewistown; A. Judson Findley, Shelby, and O. I. DeSchon, Great Falls.

The site of the next convention will be chosen later by the directors and officers.

NORTH CENTRAL TEXAS

(Continued from Page 31)

Group 1 University, 1,100 feet; No. 1-A Group 1 University, 725 feet.

Callahan County

Bronnon and others' No. 1 Block 4, drilling at 1,450 feet; No. 1 Block 5, 575 feet; No. 1 Block 14, 1,367 feet; No. 1 Block 28, 550 feet; No. 1 Block 44, 850 feet; Cranfill and others' No. 1 Block 37, 900 feet; Diamond and others' No. 1 Terry, 300 feet; Holmack Oil Co.'s No. 1 Conlee, 1,890 feet; Hornbeck and others' No. 1 Brigner, 1,350 feet; Mitchell and others' No. 1 Block 20, 1,463 feet; No. 1 Block 24, 590 feet; McCamey and others' No. 1 Strohon, 1,120 feet; Mook-Texas Oil Co.'s No. 4 McDonough, 500 feet; Petroleum Exploration Co.'s No. 1 Smart, 800 feet; Weiler Brothers and others' No. 1 Block 32, spudding.

Throckmorton County

Associated Petroleum Co.'s No. 1 Cummings, drilling at 3,205 feet; Larkin and others' No. 1 Richards, 4,235 feet; Magnolia Petroleum Co.'s No. 1 Davis, 3,615 feet; Red Bank Oil Co.'s No. 1 Parrott, underreaming; Reiter-Foster's No. 2 Stubblefield, drilling at 3,375 feet; Southern Exploration Co.'s No. 1 Stevens, drilling at 2,060 feet; Texhoma Oil & Refining Co.'s No. 3 Reynolds, 2,606 feet.

Shackelford County

Albany Oil Co.'s No. 5 Moberly, 750 feet; Carter and others' No. 1 Proctor, underreaming; Chadwick and others' No. 1 Dowell, spudding; Hope Petroleum Co.'s No. 1 Newell, drilling at 1,800 feet; Humble Oil & Refining Co.'s No. 1 McLemone, 3,815 feet; Lake and others' No. 1 Black Brothers, 1,108 feet; McLeon Drilling Co.'s No. 1 Matthews, showing oil at 822 feet; Milham Oil Corp.'s No. 1-A Clausell, setting casing at 400 feet; No. 4 Clausell, spudding; Phillips Petroleum Co.'s No. 2 Compton, drilling at 3,035 feet; No. 1 Fry, 2,625 feet; No. 9 Parrish, 2,132 feet; No. 1 Smalley, setting casing at 2,110 feet; Roeser and others' No. 1 Cook, drilling at 1,204 feet; The Texas Co.'s No. 1 Green, 400 feet; Unitel Mutual Oil Co.'s No. 1 Reynolds, 1,295 feet; Zeigler and others' No. 1 McKeever, 1,110 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 46)

the Ohio Oil Co. brought in two weeks ago. The field had been running about 700 bbls. daily and is now running at 2,800 bbls. daily on the flows coming from the Ohio's well on Section 35-36-65. The Buck Creek Oil Co. (Continental) deepened its offset well and it is making 500 bbls. daily.

The Midwest Refining Co., through its subsidiaries, completed three new producers in the Salt Creek Field the past week. The Wyoming Associated Oil Co., drilling on Section 35-40-79, has a small well in the first Wall Creek sand at 1,326 feet. The Midwest Oil Co., on Section 14-40-79, has a second Wall Creek sand well good for 20 bbls. at 2,060 feet and the same firm on Section 35-40-79 has another second sand well good for 250 bbls. at 2,082 feet.

Schuster Brothers, drilling on Section 32-40-78, on the eastern side of the field, have a good second Wall Creek sand well that started off at 150 bbls. at a depth of 2,734 feet.

The Continental Oil Co. has given up drilling on the deep test on Section 2-39-79 in Salt Creek and will plug back to the second Wall Creek sand and produce from that sand. This well was to make a test of the deeper sands, but fishing jobs filled the hole with metal and the well was abandoned in the deeper sands.

Runs for the Week

Salt Creek	60,010
Teapot	1,820
Big Muddy	3,400
Grass Creek	2,920
Elk Basin	720
Greybull	20
Rock River	3,180
Lance Creek	2,840
Poison Spider	890
Osage	280
Hamilton Dome	480
Lander	150
Pilot Butte	30
Byron	40
Lost Soldier	3,990
Ferris	60
Cat Creek	3,370
Sunburst	12,380
Lake Basin	60
Florence	400
Moffat	3,121
Fort Collins	1,305
Boulder	25
Rangeley	100
Tow Creek	115
LaBarge	300
Rattlesnake	130
Hogback	510
Artesia	4,350
Total	106,906

Field Production for Month of November

Salt Creek	1,691,620
Teapot	45,220
Big Muddy	100,670
Grass Creek	83,890
Elk Basin	21,880
Greybull	600
Rock River	95,470
Lance Creek	35,780
Poison Spider	26,840
Osage	9,660
Hamilton Dome	14,400
Lander	6,600
Byron	1,410
Pilot Butte	1,530
Lost Soldier	119,240
Ferris	2,640
Cat Creek	97,640
Sunburst	396,530
Lake Basin	960
Florence	10,320
Moffat	99,965
Fort Collins	48,253
Tow Creek	3,142
Rangeley	3,000
Boulder	750
Rattlesnake	11,831
Hogback	15,930
Artesia	138,970
Miscellaneous	3,380

Oil Securities Comparatively Inactive

Standard Oil Issues Were Features of Trading. Humble and Vacuum Sell at New High Records for All Time

By N. O. Fanning
Room 543, 30 Church St., New York

NEW YORK, Dec. 14.—Standard Oil stocks featured oil securities during the week, trading in this group being broad and active. Humble Oil and Vacuum Oil sold at new high record prices for all time. The stock exchange group of oil stocks as a whole were comparatively inactive and irregular.

Although there is a distinctly better feeling in the oil trade than there was a month ago, optimism is not rampant, especially with regard to 1926. There have been many starts on the part of the oil business toward better things during the last few years and each and every one proved only a temporary breathing spell in the period of depression. The explanation has been overproduction, both in crude oil and gasoline.

Now production is decreasing and consumption is increasing. The result of a continuance of this situation is obvious—prosperity. In other words, production will ultimately fall below consumption and prices will have to go higher in order to encourage wildcatting.

December has been a month of optimism in the oil industry, with hopes high for a big year just ahead. This December finds the optimism tempered to a point to suggest moderation, if not caution. No better augury for 1926 could be desired.

Oil securities have sold, on the average at higher levels this year than in 1923 or 1924, but are not selling at new high prices as in the case of other industrial securities.

The outlook for oil is bright enough to warrant higher quotations for oil securities representing companies in a position to profit by the broadening market for certain oil products—especially for gasoline and fuel oil—and the companies having large supplies of crude oil in storage and big current output of crude are in an unusually strong position.

Marland Oil

Stock of the Marland Oil Co. sold above 60, a new high, as the company declared a dividend of $1, payable December 31 to stockholders of record December 19. Last quarter 75 cents per share was paid.

Associated Oil

Stock of the Associated Oil Co. reached a new high above 44. Part of the strength in this stock is attributable to the prosperity enjoyed by the West Coast Oil Co., a subsidiary, that has been one of the leading participants in the large production of crude oil in Southern California. West Coast Oil has declared several large extra dividends in the past few years.

Associated Oil Co. is controlled by the Pacific Oil Co., which recently raised its dividend rate from $2 to $3 annually per share. Associated Oil continues to pay dividends at the rate of $2 per share, but some stockholders expect an increase at the first meeting next year.

The Standard Oil Co. of California is believed to hold a substantial stock interest in the Pacific Oil Co., which, as already stated, in turn controls Associated Oil.

Standard of California, Pacific Oil and Associated Oil, combined, have a potential production of crude in California estimated at between 250,000 and 300,000 bbls. daily, with some 75,000,000 bbls. of crude in storage.

General Petroleum Corp. stock was unusually active during the past week and sold well above 50.

Mountain Producers

The Mountain Producers Corp. has declared an extra dividend of 40 cents per share and the regular quarterly dividend of 20 cents, payable January 1 to stockholders of record December 15. In the two previous quarters the company paid 20 cents regular and 30 cents extra, so that the present payment is at the rate of $2.40 a year, compared with $2 previously. Each increase in payment, in the past, has been maintained by the company.

Salt Creek Consolidated

The Salt Creek Consolidated Oil Co. has declared the regular quarterly dividend of 15 cents per share, payable January 2 to stockholders of record December 15.

The General American Tank Car Corp. has declared the regular semi-annual dividend of $1.50 per share on the common stock and $1.75 per share on the preferred, both payable January 1 to stockholders of record December 15.

Sinclair Consolidated Bonds

The first stock purchase privilege accruing to the holders of the Sinclair Consolidated Oil Corp. 6 per cent bonds of 1927 expired December 1 and under the next purchase privilege bondholders would have to pay a price for the common higher than that now obtaining in the market.

The issue of $15,000,000 collateral 6s has a warrant attached by which the holder may use one of three opportunities to purchase common stock. The first of these, just expired, permitted the purchase of 50 shares of common stock at $20 per share for each $1,000 face value of bonds. The bonds could be used to pay for the stock.

Some of the bondholders, it is understood, availed themselves of the first privilege. Any further stock purchase, which really amounts to conversion in the cases where bonds are used in payment, in the next year will be at $22.50 per share. This is under the provision which permits the purchase of 45 shares of stock at $22.50 per share for each $1,000 bond, on or before December 1, 1926. The third and last purchase privilege is for 40 shares of common at $25 per share for each $1,000 bond on or before December 1, 1927.

Caddo Central Oil & Refining

A prior order of the United States District Court here for the sale of properties of the Caddo Oil & Refining Co. and the Caddo Central Oil & Refining Corp., in receivership, covered by mortgages held by the Bank of North America & Trust Co. and the Guaranty Trust Co. has been canceled and the date of sale postponed to January 8, 1926.

The later order recites that there is due the Bank of North America & Trust Co. $1,722,049 and to the Guaranty Trust Co. of New York $4,990,197 on loans protected by first mortgage, and Henry A. McCarthy and Nicholas Callan, special masters, are directed to sell the properties covered by the mortgages unless the two companies meet the obligations on December 4, the date to which satisfaction of the debt to avoid the sale was postponed when the prior order was canceled.

Southern Pipe Lines

J. M. Tussey has been elected treasurer of the southern group of pipe lines, consisting of the Eureka Pipe Line Co., Cumberland Pipe Line Co., Southern Pipe Line Co. and South West Pennsylvania Pipe Lines Co. V. S. Swisser has been elected secretary of the Eureka Pipe Line Co., thus becoming secretary of the four companies. He has also been appointed assistant treasurer and Mr. Tussey assistant secretary of the four companies.

H. C. Dorworth has been elected vice president of the Southern Pipe Line Co., South West Pennsylvania Pipe Lines Co. and Cumberland Pipe Line Co. The filling of the vacancies was made necessary by the death of E. H. Shepard.

Atlantic Refining

Atlantic Refining Co. holds the lead in gasoline sales in Pennsylvania. Of the 157,157,706 gallons sold in the State during the third quarter of 1925, Atlantic Refining is credited by Auditor General Martin with 48,029,402 gallons. The next largest sales reported by a single company aggregated 13,286,402 gallons.

Pan American Western

It is reported the Pan American Western Petroleum Corp. contemplates the sale of $15,000,000 6 per cent convertible bonds to eastern and California bankers.

Pure Oil

The Pure Oil Co. will retire on February 1 the $6,000,000 outstanding balance of the $15,000,000 5½ per cent serial purchase money notes which it issued in 1924 in payment for the Humphreys properties.

INCREASE PHILIPPINE TAX

MANILA, Dec. 14.—Approval has been given by the Governor General of the Philippine Islands for an increase ni the gasoline tax from 3 to 4 centavos per lire.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos Quot. Dec. 14	Clos Quot. Dec. 7	1925 High	1925 Low	1924 High	1924 Low	1923 High	1923 Low
American Republics	..	78	66⅝	76	48	48	25	..	..
Associated Oil	25	43	44⅞	44⅝	32	34⅝	27⅝	29⅛	29½
Atlantic Ref., com	100	107	109	117½	95⅛	140½	78½	100	98⅜
Barnsdall "A"	25	27⅝	27⅜	30	18⅝	29⅛	14	37	9⅞
California Pet., com.	25	31¼	31⅞	32⅝	23⅜	29	19⅞	28½	17½
General Petroleum	25	53	52¼	59	42	45	38⅝	..	..
Houston Oil	100	70½	71	85	59	82½	61	78	40¾
Independent Oil & Gas	..	32	33⅜	41⅝	13½	16¼	5⅜	11½	3⅜
Indian Refining	10	12	13	14¼	5⅛	7	8⅝	8½	4
Louisiana Oil	10	17⅛	17⅜	23⅜	13⅜	..	..	..	..
Maracaibo	..	25	25¼	35½	20⅜	37½	25⅜	28¼	16
Marland	..	58	59	60½	32⅝	42	29	50⅝	18½
Mexican Seaboard	..	9⅛	10⅝	22½	9	25⅜	14⅜	19⅜	5¾
Mid-Continent Pet.	..	35⅝	36⅝	38	25⅜	40¼	22⅝	62¼	23¾
National Supply	50	56⅛	56	71	55⅛	72½	54	68	54
Oil Well Supply	..	*36	24⅜	38	34¾	..	..	..	..
Pacific Oil	..	60⅛	60⅝	65¼	51⅛	58¼	45	52⅛	31½
Pan Amer. P. & T., com.	50	75	76½	83⅞	61	65	44½	93½	53
Pan Amer. P. & T., com.	50	75	76½	83⅞	61	65	44¼	93½	53
Phillips Pet.	..	44⅞	45¼	47⅛	36¼	42¼	28½	69⅝	19⅜
Producers & Refiners	50	14¼	14⅜	32⅝	12½	43⅛	29¾	58¼	17½
Pure Oil, com.	..	29⅝	26⅞	33⅜	25⅛	30¼	20	32	16½
Royal Dutch, N. Y., sh.	13.40	54⅞	54⅜	57⅞	48⅛	59⅛	40⅜	55½	40½
Shell Transport	10	46⅛	46⅜	45⅜	39⅜	42	33	41¼	29⅛
Shell Union, com	..	25⅜	26⅛	28⅜	21⅝	22½	15⅜	19¼	12⅜
Simms Pet.	10	23¼	23⅜	26⅜	17⅜	24	10⅜	16⅜	6½
Sinclair Consolidated, com	..	21	21¼	24⅞	17	27⅛	15	39⅜	16
Skelly Oil	25	31¼	31⅜	32½	21⅜	29	17⅛	35	12⅛
Standard of California	25	55⅛	56	67¼	61½	68½	55½	64½	47½
Standard of N. J., com.	25	43	44	47½	38⅜	42½	33	44¼	30⅞
Sun Oil Co.	..	40	39½	46½	33⅜	..	..	..	..
The Texas Co.	25	52¼	52⅝	54⅝	42⅜	45⅝	37⅜	52⅞	45⅝
Texas Pacific Coal & Oil	10	15⅛	16	23⅞	11	15¼	8¼	23¾	5½
Tide Water Oil (new)	..	35½	36½	152	122	151	116¼	144	94
Transcontinental	..	4⅝	4½	5⅞	3½	6¼	3¾	14¼	1¼
Union Oil of California	25	35½	36¼	43⅞	33¼	39	35½	..	..
Union Tank, com.	100	†94	*127	134	118	132⅝	94	114	106
White Eagle Oil & Ref.	..	27¼	27⅝	31⅜	25⅝	29⅝	23½	30⅝	29½
Standard Oils									
Anglo-American Oil	£1	18	18	26⅜	18	18⅞	14⅝	19⅜	13½
Borne Scrymser	100	*223	*223	240	205	264	150	153	110
Buckeye Pipe Line	50	54	54½	72	54	85½	51	94	57½
Chesebrough Mfg. Co.	25	68¼	*68¼	74	48½	52½	29½	340	205
Continental	10	24⅝	25⅞	31¼	21⅞	..	..	..	..
Crescent Pipe Line	25	15½	16	17½	10	20	11¼	25	15
Cumberland Pipe Line	100	*130	139	156	128	148	108	117	80
Eureka Pipe Line	100	62	65¼	96	70	105	74	117¼	87
Galena Signal, com.	100	35	36	68½	34½	69⅜	52½	78	55
Humble Oil & Refining	25	82⅛	79⅝	79⅝	42½	43⅜	36	41	28¼
Illinois Pipe Line	100	134¼	133	154½	127	161	123	171	115
Imperial Oil (Ltd.)	..	36⅝	36⅜	37½	27¼	119	99	123	92
Indiana Pipe Line	50	57⅛	61	84	60	110	66	103	81
International Pet. Co.	10	33⅝	35	35⅝	22½	24⅜	16⅞	24⅜	13¼
Magnolia Pet. Co.	100	182¼	*185	186	130½	162	125	166	123
National Transit Co.	12.50	17⅞	17¼	25½	19½	25⅞	20⅝	20	19½
New York Transit	100	50	52	79	50	97	54½	138	70
Northern Pipe Line	100	71⅝	80¼	88	70	107½	72	111	96
Ohio Oil Co.	25	64⅞	64	75¼	60	79⅛	53	85⅜	48¾
Penn.-Mex. Fuel	25	22	23½	44	20	35⅝	27	45	10½
Prairie Oil & Gas	25	55	56	65½	45⅞	269	193	272	152
Prairie Pipe Line	100	128	126	127½	106	111	100	117	93
Solar Refining Co.	100	210	*210	269	200	240	170	212	161
South Penn Oil	100	171	171	197	139	176	117	196	100
Southwest Pa. Line	100	*53	57¼	84	53	89	68	89	66
Southern Pipe Line	100	65½	66⅜	103	67½	100	80⅛	116	87
Standard of Indiana	10	66	66⅝	70	59½	69⅜	54¼	69⅞	48½
Standard of Kansas	25	34	34	46	30½	50⅛	32⅛	56¼	36½
Standard of Kentucky	25	134	134⅜	137	114⅜	121⅞	101	109½	76
Standard of Nebraska	100	240	242	270	231	262	198	280	186
Standard of New York	25	45⅞	46⅝	48⅝	40	48	37⅜	49⅝	35½
Standard of Ohio, com.	100	361	364	369	338	337½	277	320	270
Swan & Finch, com.	25	22½	19¼	27	12	28	20	..	..
Vacuum Oil	25	106¼	101⅜	105½	80⅛	83⅛	50½	55½	40
Washington Oil	..	*30	*33	35	30	30	25	28	20¼
Miscellaneous									
Gulf Oil Corp. of Pa.	25	84⅞	84⅛	84⅞	63½	67⅝	56	68¼	45⅝

*Bid, no sales. †Bid ex stock dividend.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Dec. 14	56.89	Nov. 9	56.47	Oct. 5	52.94
Dec. 7	57.99	Nov. 2	55.67	Sept. 28	51.29
Nov. 30	56.93	Oct. 26	55.61	Sept. 21	51.65
Nov. 23	56.49	Oct. 19	50.08	Sept. 14	53.02
Nov. 16	57.31	Oct. 10	52.18	Sept. 5	51.18

CALIFORNIA 607,000 BARRELS NEXT JULY

(Continued from Page 22)

focus point in the United States production situation. Eastern fields have long been on a settled production, with a very small likelihood of extension. Mid-Continent fields are either settled or rapidly declining, and certain fields looked forward to as trouble makers, of which the Garber Pool, in Oklahoma, is the foremost example, are now declining very rapidly, and a possibility of extension of the area of these fields or deeper sand discoveries, does not seem imminent. This fact further increases the importance of California's position as a disturbing factor, on account of California's continued increase in production. Of the 400,000,000 bbls. of stock in storage in the United States, the major part is held in Mid-Continent fields or at eastern refineries by a few major companies. Price reductions of California fuel and heavy crude in September permits California to successfully compete with Eastern markets and at the rate we are shipping shows no immediate relief for Mid-Continent fields. Naturally Mid-Continent producers and handlers are interested, if not worried by this competition.

Independent of California's part in Mid-Continent affairs, the Mid-Continent has its individual problems. This has to do with a possibility of smaller oil buyers, not held by long-time contracts as in California, in the face of an approaching somewhat heavier consumption of gasoline and other commodities, stepping out and offering a premium, thereby compelling new higher prices to be posted by the larger buyers. So that, even if California finds that it is depleting its storage too rapidly and must curtail these shipments, thereby raising the price, it is likely, in view of the Mid-Continent situation I have just mentioned, to grant them only a temporary respite—and California, even with a higher price, which I expect in mid-summer, can continue to ship in competition with the Mid-Continent, and the latter will find themselves in the same dilemma that is now confronting them. However, in spite of the enviable position of successful competition that California now enjoys and may continue to enjoy in eastern markets, I do not believe, for reasons set forth in this discussion, that California can safely continue to ship its petroleum reserves and thereby reduce itself to such an unsafe margin as would result.

Natural Gas and Gasoline

Here are a few points of interest regarding our natural gas, gasoline and gasoline supply: Figures show that 28,065,256 gallons of casinghead gasoline were recovered from 21,644,903,000 feet of gas treated during the month of October. Stocks of casinghead gasoline at the end of October were only 3,140,000 gallons, or approximately 11.20 per cent of the October production. At the present rate of utilization, stocks show less than four days supply.

The production of straight run gasoline during the same month amounted to 159,481,499 gallons. Casinghead production (28,065,256) was 17.60 per cent of the total straight run gasoline. In other words it requires about 17.60 per cent of the casinghead gasoline to be used for blending with every 82.40 per cent of straight run gasoline. This percentage of casinghead gasoline is indeed quite low, for in most cases it requires a greater percentage of casinghead to be blended with straight run gasoline.

Storage of straight run gasoline at the end of October amounted to 395,541,484 gallons. Under present conditions, then, this gasoline in storage will require approximately 70,000,000 gallons of casinghead before being marketable. Where is it coming from? It means that we have to take out the old curry-comb and do a little scratching for casinghead. New fields are the only solution for big production—old fields for a small additional amount of casinghead.

Compressors in time may be a great factor in obtaining more production, but hardly give sufficient immediate promise of meeting this deficit.

As an intermediate and more or less temporary remedy, assuming that no new fields of high grade crude show up on the horizon, and casinghead is harder to find than a needle in a hay stack, we will have to cease cutting into our crude in refining, and go back to producing a higher gravity straight run gasoline. Our intermediate commodity—distillate—will then come back with a bang. Certainly the future will demand education of the public to the acceptance of lower gravity gasoline that need not be water white either. Some difficulty, too, will be experienced in this reversal of form after several years of developing a demand for higher gravity, quick starting fuel that casinghead blending has produced, but I believe low gravity gas is inevitable.

At any rate it looks as if the casinghead problem has a direct bearing on better gasoline prices.

DONATION STARTS RESEARCH PROGRAM

(Continued from Page 22)

Institute of Mining and Metallurgical Engineers, and a member of the research committee of the American Association of Petroleum Geologists, pointed out the need of further search for fundamental scientific truths and relationships and said Mr. Rockefeller's gift is a substantial basis for beginning such work.

"It seems to me particularly appropriate that Mr. Rockefeller should include research in the petroleum industry among his many philanthropies," Mr. De Golyer said. "It is essential for the public interest as well as for that of the industry, that we should be able to improve our present methods of oil finding, oil recovery and oil utilization. These problems are respectively the problems of the geologist and engineer, the physicist and the engineer, and the chemist and the engineer. Individual companies are willing to investigate the practical side of these problems and to some extent their purely scientific side. What is needed at present is further research for fundamental scientific truths and relationships—facts of the sort that are too often as of only academic interest. Mr. Rockefeller's gift is a substantial basis for beginning such work."

F. Julius Fohs, prominent geologist and chairman of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, said:

"The industry should benefit greatly from the establishment of the research fund by John D. Rockefeller. The problems demanding solution are many and varied and range through the technology of production, refining and transportation engineering to the realms of chemistry, physics and geology, as well as economics.

"This particular research, as we understand it, is restricted to the chemistry, physics and geology of petroleum. In chemistry, there is still much regarding the basic character of petroleum compounds and their derivatives that it is necessary to know in order to improve the refining technique, to make products available for a greater number of uses and more readily available for major uses as they arise—especially problems connected with the conversion of one form into another, as current demand may require.

Avoiding Duplication

"In the physics of petroleum, a fuller knowledge is necessary of the physical characteristics of the various distillates and compounds as well as a study of the physical conditions of the occurrence of crude oils and their relation to reservoir beds, and a further study of geophysical problems and of instruments for their solution as an aid in the location of structures with which oil pools may be associated.

"In regard to the latter, for example, it is now necessary for practically each company to determine its own standards before it can make use of the new knowledge gained where investigations of this type should really be undertaken by and for the industry as a whole, thereby avoiding duplication now experienced.

"Geology has many problems of immediate interest; the origin and accumulation of oil, the synthetic producion of oil from the kerogen of shales, the flow of oil in reservoir rocks and relation of oil with salt water, the effects of faulting on the accumulation of oil, the making available of a collection of foraminifera type descriptions and plates already appearing in scattered sources in foreign lands, and the collecting and photographing of types from field specimens and well cuttings, most necessary to the industry, and many similar problems.

"It is interesting to note that a practical group from the industry was named as the committee which assures that necessary problems will receive first attack. It is to be hoped that this committee will cooperate directly with the National Research Council in order that they might have the benefit of their scientific outlook."

Petroleum chemists regard the Rockefeller donation as of particular importance in the development of new investigations in existing laboratories and especially directing the work of university personnel and laboratories into petroleum channels.

Opens New Period

Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association, hailed the donation as the opening of a new period in the history of petroleum. His statement follows:

"In an address before the American Chemical Society last spring in Baltimore, I referred to a comprehensive report on the subject of fundamental research on petroleum by 11 of the most prominent scientists of the country, and stated:

" 'The realization of the great program prepared awaits now only concurrence in the importance of the work on the part of the financial leaders of the industry and the willingness on their part to set aside a small fraction of their investment annually to start this work in full force. * * * After reading the comprehensive report which has been prepared, I cannot escape the conviction that the great leaders of our oil industry will soon have put to them the decision of determining whether they will go down in history as the despoilers of one of the nation's greatest assets or as benefactors who made available a greater source of national wealth than is now derived from petroleum.'

"Mr. Rockefeller's gift makes possible the beginning of the realization of that program. It may well be hailed as the opening of a new period in the history of petroleum. From its very nature fundamental research requires time, so we must not expect startling events in the immediate future, but all who have studied beneath the surface of industrial advance realize that it is based primarily upon fundamental research. The way is now open for the beginning of such work and I predict that Mr. Rockefeller's initial gift for this purpose is but the forerunner of still larger contributions from the men who have made and are making their wealth in this raw material, and will eventually bring together a fund which will carry out fully the multifold lines of research discussed in the report of the special committee. Might it not be well if our great iron and steel industry should have prepared a similar survey as to the needs of research in their industry. If this should be done I am confident that men like Judge Gary, Mr. Schwab and others would be somewhat mortified at the small amount being expended in this country for fundamental research in this basic industry, and would take steps to remedy such deplorable situation."

A Fertile Nucleus

H. Foster Bain, director of the American Institute of Mining and Metallurgical Engineers, and formerly director United States Bureau of Mines, said:

"The gift by Mr. Rockefeller toward establishment of a fund for research to be administered by the American Petroleum Institute should stimulate other giving to the end that an adequate fund be assembled to permit effective work. The sum of $50,000 per year for five years is not enough for more than a beginning and a testing of plans. In these modern days a few thousand dollars does not go far and there is little use in making a start in research, which requires time for fruition, unless it lead somewhere.

"It has been strikingly characteristic that of all the money made in this country out of the oil industry very little has gone back into it in the form of gifts. Oil-made money has endowed schools, medical research, hospitals and many other most desirable institutions, but the oil industry has done substantially nothing for itself in the way of providing for fundamental research.

"A number of the companies support industrial research in their private laboratories directed toward solution of problems of immediate or fairly immediate interest, but the long look ahead so much needed has not been provided for. With all the wealthy, public-spirited and generous men in the oil business it has been something of a mystery that they have helped substantially all others and not their own industry.

"It is pleasant to note that Mr. Rockefeller has again pioneered. He has set a very good example. A really big endowment, properly administered, could accomplish as much from research on petroleum as in any direction known. It is to be hoped that the nucleus will prove fertile and a powerful institution developed."

William N. Davis, president of the Mid-Continent Oil & Gas Association and vice president of the Phillips Petroleum Co., said:

"Mr. Rockefeller's generous donation for petroleum research will doubtless be the start of a fund which, as the work provided for by it enlarges, will have increasingly important results. Oil has become so essential to our everyday life that research of fundamental petroleum problems has possibilities of broad and lasting beneficences. With the thought of what has been accomplished by research in the stamping out of disease and in other lines, it is gratifying that Mr. Rockefeller has also turned his attention to this field for his benefactions in which not only the petroleum industry but the nation and the public generally will share."

GROUP SESSIONS TO FEATURE A.P.I. PROGRAM

(Continued from Page 24)

Institute's headquarters and meetings will be at the Biltmore Hotel. A list of conveniently located, European plan, Los Angeles hotels, with rates, follows:

Alexandria, Fifth and Springs Streets, without bath, $2.50 and up; with bath, $4 and up.

Ambassador, 3400 Wilshire Boulevard, without bath, $3 and up; with bath, $5 and up.

Biltmore, Fifth and Olive Streets, with bath, $5 and up.

Clark, Hill Street, between Fourth and Fifth Street, without bath, $2.50; with bath, $3 to $5.

Commodore, Seventh and Lucas Streets, with bath, $3 and up.

Gates, Sixth and Figueroa Streets, without bath, $2 and $2.50; with bath, $2.50 to $4.

Hayward, Sixth and Spring Streets, without bath, $2 to $4; with bath, $2.50 to $7.

Lankershim, Seventh Street and Broadway, without bath, $2 to $3; with bath, $3 to $5.

Rosslyn, Fifth and Main Streets, without bath, $1.50 and up; with bath, $2.50 to $5.

Savoy, Sixth Street and Grand Avenue, without bath, $2; with bath, $3 to $4.

Stowell, Spring Streets, between Fourth and Fifth, with bath, $2.50 to $5.

Van Nuys, Fourth and Main Streets, without bath, $2 and $2.50; with bath, $3 to $5.

GETS BUILDING CONTRACT

The International Harvester Co. has awarded the Austin Co., engineers and builders, Cleveland, a contract for the design and construction of a large new unit at its Milwaukee plant to cost approximately $125,000.

DRILLER TURNED KITE MAKER; WIND WRONG

(Continued from Page 28)

wise, hence Blanktown was the scene of their activities.

The shades of eve had fallen, and the quartette was on a side road at the edge of the village where a spirited debate was held at to whether or not Mr. Volstead had ruined the musical properties of a song called "Sweet Adeline." On their trail was the local arm of the law whose nose had detected the aroma of the beverage. They might have continued but for an unfortunate whoop that escaped one of the members. To say that he whooped is woefully insufficient, but there are sounds that defy a perfect description. The sound which emerged from his thorax was a cross between a super radio set hitting on all six tubes with the loud speaker thrown into high gear, and the noise made by the steamer Berengaria in a dense fog.

One bad apple can spoil a barrel, one bad inning can spoil a good ball game, and one inadvertent whoop can bring absolute ruin to a party. The whoop indicated the quartet's presence to the marshal and the next stop was jail.

The case came before the local jurist next morning. It happened that Blanktown was experiencing its first oil activity at this time, and the population was worried lest the town be ruined by the oil field workers. Realizing that a rather antagonistic feeling was manifested towards them, the first oil field worker to approach the bar of justice decided in favor of renouncing the profession which furnished him ham and eggs. When asked by the judge what his occupation was, he replied, "Judge, I'm a kitemaker, but the wind has not been blowing, and I'm out of work." "Twenty dollars fine and five days in jail," said the judge. "By that time the wind should be blowing again." The other members of the party upon hearing the sentence quailed. Before they had a chance to regain their composure, the judge had asked their occupation, and they were too frightened to lie. "Oil field workers, eh?" said his honor. "The fine'll be $5 apiece; next case."

MORAL. In order to fully appreciate the merits and advantages of civilization, it is absolutely necessary that we go out occasionally and mingle with the Indians.

AVIATION DEVELOPMENT IN THE UNITED STATES

(Continued from Page 28)

country as in Europe. In this respect they should stand on a general parity with vehicles of transportation by sea. For waterborne transport the Federal Government has provided a body of marine law. It lights the coasts, harbors and rivers; it studies the currents and marks the channels; it surveys all navigable waters and publishes charts, sailing directions, and the Nautical Almanac; it maintains the Life Saving Service, regulates anchorages, issues weather maps and storm warnings, and spends millions yearly on river and harbor improvements; it inspects and certifies vessels for seaworthiness and examines and licenses all officers. If these aids were withdrawn waterborne transport would be difficult, if not impossible, under modern economic conditions. Unless some similar aid be given to air transport, development in that line will be seriously retarded."

Commercial Contracts

Aviation authorities state that the most important recent practical development for the aid of commercial flying was the passage of the Kelly law authorizing the Postoffice Department to let contracts to private companies and individuals to operate air mail service. Postmaster New has awarded such contracts on five commercial routes as follows: Boston to New York, via Hartford; Chicago to St. Louis, via Springfield; Salt Lake City to Los Angeles; Chicago to Dallas; Elko, Nev., to Pasco, Wash. These lines will probably be operated by these companies by the spring of next year. More recently the Ford Motor Co. was the successful bidder for the air mail routes between Chicago and Detroit and Cleveland and Detroit.

Much attention has been given to the entrance of Henry Ford into the aviation field. The Ford Motor Co. took over the Stout Metal Airplane Co. and is operating lines between Detroit and Cleveland and Chicago for interoffice freight and mail. One of the outstanding events in aviation stimulation this year was the Ford reliability tour. The association of the Ford name with an air flivver is logical and may be borne out in the future, but at the present time the Ford aircraft are not at all of a flivver type.

Commercial air operations in this country in 1924 suffered a noticeable decline for 1924 from 1923, but this year and doubtless for coming years will show progressive increases. The figures of the Aeronautical Chamber of Commerce follow:

	1924	1923	1922
Miles flown	922,048	3,014,611	2,846,037
Fixed base operations reporting	60	124	129
Aircraft in use	217	429	450
Passengers carried	48,904	80,888	75,268
Pounds of freight carried	159,564	208,302	110,663
Average charge per short flight	$4.73	$5.50	$7.00
Average charge per passenger mile	.39	.45	.428
Average charge per machine hour	40.00	.....	.....
Average charge per lb. mile	.0018	.104	.036

History Since Armistice

The history of commercial air operations in this country since the armistice may be summed up in a few words. First, tremendous optimism founded upon the widespread curiosity of the public; limited financing built upon the assumption that curiosity would force the development of air transport without further engineering and without application of a deliberately worked out national policy. Second, diminishing enthusiasm and waning curiosity; dissolution of ambitious undertakings because of obsolete equipment, lack of airways, lack of public terminals, and, above all, lack of paying business. Third, readjustment upon a reduced but sounder financial basis; activities limited to those phases of aviation for which there is a demand; this demand increasing as evidences multiply of the early formulation of a national air policy.

A survey of world aeronautics, brings out the fact that progress abroad, particularly in Europe, is being maintained, but that in this country, which has been backward in its aircraft development, very definite and important strides have been made this year with the prospect of a real awakening beginning next year.

IS WELL OIL OR GAS ISSUE BEFORE COURT

GUTHRIE, Okla., Dec. 12.—When is an oil well not an oil well, is a question that the Federal Court for the Western Oklahoma District must decide.

George Tipton, Guthrie banker, has been appointed receiver for half the revenue from Kelly well No. 1 in the Otstott Pool near Blackwell in action brought to determine whether it is an oil well or a gasser.

The Arkansas Fuel Co. of Tulsa claims that it is an oil well and the Harold Petroleum Co. of Blackwell asserts it is a gasser.

The well, the first drilled on the lease, was sunk by the two companies jointly under an agreement that if it should be an oil well the Arkansas Fuel Co. would have the exclusive right to operate, paying the Harold company 25 per cent of the revenues and retaining 75 per cent.

If the well proved to be a gasser, the Harold company was to operate it and the division of the revenues was to be reversed. The well came in a 35,000,000-foot gasser last May and the Harold company assumed control. The oil flow, however, increased steadily, and several months later the value of the oil exceeded the revenue from the gas.

PENNSYLVANIA MARKET PRICES HOLDING FIRM

OIL CITY, Pa., Dec. 12. — All the products on the refined list have held firm in the Pennsylvania territory during the week, with the possible exception of wax, for which there seems to have been little demand.

Cylinder stocks have shown strength during the week, although some of the refiners claim that the prices are not yet what they are trying to obtain. Gasoline advanced slightly during the week and now motor gasoline is being quoted at almost all refineries at 12½ cents, and it would be practically impossible to obtain any below that figure. Neutrals and kerosene are also showing strength.

Demand for the various products has been good, but Pennsylvania crude is still very hard for refiners to obtain, with the exception of that which is produced in Ohio, which seems to be offered more freely than the remainder.

DEPLETION AMENDMENT DRAFTED BY COMMITTEE

(Continued from Page 21)

and depletion is too arbitrary, and Congressman McKeown insisted that "no man knows what is under the ground and only the bit reveals." Every new oil well is a discovery and every oil well should be allowed some sort of discovery depletion, although it probably should be graduated in proven territory.

"The original cost in drilling of an oil and gas well is not all that should be charged against a particular property, for the reason that in the ordinary course of the development of oil properties the individual companies to protect their interests must incur tremendous expenses in geological departments: they must also incur expenses in their scouting and other departments, and if they are not allowed to charge those expenses to the discovery well, that is lost and lost to them forever," Congressman Montgomery said.

Would Affect Supply

"This particular measure is not a measure that the big man can take advantage of and the little man cannot. It is exactly the contrary. More than 50 per cent of the oil that is developed and produced is developed and produced by the independent producer. The law of average will permit the big man in his diverse course of development each and every year to charge in his dry holes against some discovery well but the little man does not have a discovery well and cannot do that. If this measure is modified as suggested it will stifle the genius and the industry of the little man entirely, and when you do that you are going to affect the source of supply and demand, and you are going to affect the price of gasoline, and in the end the consumer will pay the price and pay the tax that this amendment would saddle on the oil man.

"My only objection to this measure is that it is not broad enough. It does not permit the oil man sufficient latitude and I think that the old bill of 1924 is the one which should prevail. I do not believe the gentleman from Missouri can cite one single instance where the oil men or the oil industry in its entirety has ever taken advantage of this particular provision and I will give him full privilege to present the Couzens' report in that regard.

"I am going to vote for this measure in its entirety, because I think it is a salutary and much needed piece of legislation; although this particular provision is not wide enough and does not permit sufficient latitude to this great industry."

Plan Is Arbitrary

Mr. McKeown insisted that "even the committee plan is arbitrary."

"You have no right to assume, from experience in the oil fields, that 160 acres is a fair unit," McKeown said. "It is the unit contended for by the treasury department, but every man who has been in the oil fields knows that you may have a 1,000-bbl. well on a given 10 acres of land and across the road there will not be a drop of oil, and you cannot find oil although you drill out your pocketbook."

"There is nothing on earth that will tell where oil is except the drill," Mr. McKeown continued. "I do not care how much money you spend on geologists."

Mr. Lozier interrupted McKeown to ask if it is not a fact that the Standard Oil Co. gobbles up the leases in the Mid-Continent or anywhere else where oil is discovered.

Mr. McKeown said that the Standard bought developed property largely.

"As soon as oil comes to the top of the ground anywhere, not only the Standard but every oil company that is in the business anywhere in the United States, comes in on the first train and takes every means to get leases at the best prices they can make."

Congressman Carter ridiculed Lozier for offering an amendment on a matter about which "he knew a great deal less than nothing."

"When you take a barrel of oil out of the ground you are depleting your stock, just as you are depleting a grocery stock when you take out a barrel of sugar. It is the little operator and not the great big companies which go out and develop the new fields. Let Congress keep on throwing obstacles in the path of the independent producer and the first thing you know there will not be sufficient oil to meet the needs of the country."

NORTH TEXAS MARKET SHOWS LITTLE CHANGE

FORT WORTH, Tex., Dec. 14.—There is very little change in the refined oil markets of North Texas, with the exception that U. S. Motor Oil is slightly weaker, while kerosene and fuel oil are showing additional strength. Refiners, however, are not worried over the apparent softening of Navy, which is still selling at 10 cents to 10¼ cents.

Considerable 64-66 375 end point gasoline moved out of this territory at 12⅝ to 12¾ cents, a price slightly higher than last week's quotations. Buyers were still in the market late in the week in an effort to get just about all of this stock that was to be had. Several exporters were in the market strong the latter part of the week. A flat price of 9¾ cents prevailed during the week on 56-58 460 end point gasoline.

The kerosene market was slightly stronger. Quotations for 41-43 water white kerosene ranged from 5⅜ to 5⅝ cents, about an eighth higher. Several buyers were still in the market at the end of the week.

The fuel oil market is still strong, with practically no fuel at all to be had. Prices range from $1.60 to $1.65 per barrel in the Wichita Falls territory. The railroads are reported as still being heavy buyers. Further advances are freely predicted.

The crude oil market is decidedly firm, with some independent refiners paying premiums of 10 cents to 15 cents. Some smaller plants are offering a premium of 25 cents, preferring to make it a flat price rather than a premium over the posted prices of pipe line companies.

TAX OVERPAYMENT RATHER THAN EVASION

SAN FRANCISCO, Cal., Dec. 12.—Referring to the press dispatches relative to Standard Oil Co. (California) taxes, K. R. Kingsbury, president of the company, stated:

"Standard Oil Co. (California) for the years 1918, 1919 and 1920 made an overpayment of taxes, and is entitled to refund for such overpayment. The amount of such refund is dependent on whether or not the company is permitted, in accordance with an option under the regulations of the Internal Revenue Department, to change its system of accounting by charging its development costs during the years in question to expense rather than to capital. Such practice in accounting is not unusual with oil companies. No question of tax evasion is involved, but, on the contrary, whichever way the question pending in the department is decided, the company will be entitled to a refund."

REFINING AND MARKETING

POSTED PRICE UPHELD IN TEXAS LITIGATION

The Supreme Court of Texas in a decision of the past week sustained the holdings of the lower courts in regard to the effect of proration on a contract between refiners and producers based on the posted schedule of a major crude purchaser. In this case the American Refining Co. which operates a refinery at Wichita Falls, Tex., was sued by certain producers for the alleged failure to carry out a contract for crude oil purchases from the plaintiffs which was based on the posted market price of The Texas Co.

During the life of the contract which was in 1923 several of the major purchasing companies prorated their purchases and due to this fact crude oil was available under the posted prices. It was contended by the American Co. that since the crude oil was available under the so-called posted price the latter did not represent the price on which the contract was based. Both the lower and the higher courts held that the contract was based on the posted price of The Texas Co. and was not affected by the proration measure. The case attracted considerable attention when tried in the lower courts due to the fact that there were several alleged breaches of contract involving the same legal principle at that time.

TENNESSEE GASOLINE TAX

MEMPHIS, Tenn., Dec. 14.—With $2,360,194.98 already reported collected up to October 1, gasoline tax receipts in Tennessee this year are expected to pass the three million-dollar mark since the average monthly collection this year has been more than $250,000. The figures for the three quarters alone of this year surpassed the receipts for the entire year of 1924 by $543,975.95. Part of the increase is accounted for in the increase in tax from 2 to 3 cents last February.

PIERCE PETROLEUM OFFICERS

NEW YORK, N. Y., Dec. 14.—In addition to Edward D. Levy, whose election as president of the Pierce Petroleum Corp. was announced last week, other officers elected by the corporation are R. W. Fowler, vice president in charge of marketing; J. J. Allison, vice president in charge of manufacturing; S. W. Everett, comptroller; J. H. Preuss, Jr., assistant secretary, and J. J. O'Brien, assistant secretary and treasurer.

All offices, except those of the chairman of the board and assistant secretary, have been removed to St. Louis, Mo.

VACUUM TO OPEN OFFICE

HOUSTON, Texas, Dec. 14. — The Vacuum Oil Co. is planning to open a branch office in Houston with W. N. Throop, formerly assistant manager of the Dallas office, in charge. The office will handle lubricants and marine oil principally.

TO RESUME OPERATIONS

HOUSTON, Tex., Dec. 14.—Operations have been resumed by the Galena-Signal Oil Co. of Texas at its plant on the Houston Ship Channel. Both gasoline and lubricating oil departments are running.

OPENS TEXAS HEADQUARTERS

HOUSTON, Tex., Dec. 14.—The Atlas Petroleum Co. of Kansas City, Mo., a marketer of petroleum products, has established Texas headquarters at Houston with B. L. Meece, formerly sales manager in Kansas City, in charge.

REFINERS OFFER RATE ARGUMENT BEFORE EXAMINER AT DALLAS

By George R. Kelley

DALLAS, Tex., Dec. 12.—Southwestern oil refiners vigorously opposed the proposed 5 per cent advance in rates of western carriers in the hearing before the Interstate Commerce Commission at the Jefferson Hotel, held here today and yesterday. The Thursday night session was given over to a hearing of testimony by the oil men, previous hearings being devoted by Examiner J. B. Keeler to other lines of industry, particularly to the cattle and agricultural industries. The hearing not only concerns the proposed increase in freight rates, but is part of a nation-wide investigation of freight rates authorized at the last session of Congress through the Hoch-Smith resolution.

Fayette B. Dow, of Washington, D. C., attorney for the American Petroleum Institute, was counsel for the refiners and the main witness was D. W. Moffitt, of Tulsa, vice president of the Mid-Continent Petroleum Corp. The A.P.I., the Western Refiners Association and the Association of Natural Gasoline Manufacturers were represented by one witness, though there were many other representatives of the industry present at the hearing. Among these were: Lacy Walker, of New York, representing the American Petroleum Institute; A. V. Bourque, of Tulsa, secretary of the Association of Natural Gasoline Manufacturers; F. P. Klingensmith, of Tulsa, traffic manager of the Transcontinental Oil Co.; A. C. Holmes, traffic manager of the Empire Refineries, Inc., Tulsa, and E. A. Starr, of Fort Worth, traffic manager for the Texas Pacific Coal & Oil Co.

Refiners protested against the proposed raise in rates on the ground that present rates were sufficiently high, that they were now paying all that the industry would stand and that during the past few years, taken on an average, the refiners had been operating without profit. The fact that they have been operating without profits was assigned to the problem of overproduction and also to the invasion of California refiners into the normal markets of the Mid-Continent territory.

Refiners offered further evidence, saying they are absolutely dependent upon the railroads, as they are not in position to take advantage of water rates. It was pointed out that the interests of the refiners and the railroads are mutual, that the refiners give railroads a vast tonnage for long hauls and that any change in the rates that would work to the disadvantage of the refiner would in turn work a hardship on the railroads. They contended that an increase of 5 per cent, which is asked for by the railroads under the Hoch-Smith bill, would seriously restrict the refiners market and prove detrimental to the oil industry and the railroads alike.

Gasoline Essential

"The public thinks of the motor car generally as a pleasure vehicle," said Mr. Dow, "but the fact is that gasoline is the most essential transportation fuel in modern life. And where we refer to the effect of freight rates on gasoline used by passenger cars we mean that vast necessary transportation work done by the passenger vehicle, and not the minor part used by joyriding."

There is not a part of modern life that gasoline does not touch, he said. Mr .Dow told how the motor car had reached down to the farm, even in remote places, and was replacing the horse. Even the railroad itself was supplanting some of its steam power with the gasoline-driven car, he said.

A. C. Holmes testified that any increase in rates on petroleum in the Mid-Continent Field would restrict oil traffic over the railroads. He said pipe lines never would have attained their present development if the roads had permitted rates low enough to make rail transportation profitable. He said 237,000 cars of petroleum products from 31 refiners in 1924 brought $52,000,000 in revenue to the railroads.

EVAPORATION LOSSES IN REFINING PLANTS

WASHINGTON, D. C., Dec. 14.—Evaporation from storage tanks has accounted for only a small part of the losses of gasoline by refiners, according to a report of an investigation conducted by Ludwig Schmidt of the Bureau of Mines. Loss from storage tanks amounts only to 2.5 per cent of the gasoline handled while total losses from all causes amount to 6.3 per cent.

The report pointed out that in the past refiners have been directing their attention principally to storage tanks as a means of lessening gasoline losses while larger losses were due to other causes.

Mr. Schmidt urged better construction and operation of the refineries themselves to reduce gasoline losses to a minimum.

RESALE AGREEMENTS ORDERED DISCONTINUED

WASHINGTON, D. C., Dec. 14.—The practice of some oil companies to enter into agreements with dealers to the effect that their oil stoves and heaters are to be resold by the dealers at prices specified or fixed by the oil companies has been ordered discontinued by the Federal Trade Commission.

Citing the Standard Oil Co. of Kentucky in particular, the commission alleged that the oil companies in marketing of such stoves enforced a merchandising system of maintaining certain uniform prices at which the stoves were to be resold by retail dealers, preventing some dealers from selling the stoves at such lower prices as might be deemed by the dealer as adequate and warranted by his selling costs and trade conditions.

FIRE AT LOUISVILLE PLANT

LOUISVILLE, Ky., Dec. 14.—Fire, caused by an explosion of gases while stills were being cleaned, caused the death of one person, serious injuries to two others and property damage of several thousand dollars at the Louisville Petroleum Refining Co.'s plant here last week. A negro helper, Emmett Golden, was killed and Joseph Dance and William Cooksey, white men, were seriously burned.

ASKS NEW FREIGHT RATES

The West Texas Chamber of Commerce will prepare a brief for presentation to the Interstate Commerce Commission asking for an adjustment of freight rates affecting shipments of oil field and station and refinery supplies into Artesia, N. Mex., and shipments of crude and refined oil from that point. The chamber recently enlarged the field of its activities to cover several eastern counties of New Mexico, the area embracing the Artesia oil district.

J. B. ADOUE RESIGNS

HOUSTON, Texas, Dec. 14—J. B. Adoue has resigned from the sales staff of the Sinclair Refining Co. in south Texas to accept a position with the Guardian Trust Co. of Houston.

ASSERT PENNSYLVANIA EVADES GASOLINE TAX

HARRISBURG, Pa., Dec. 12.—Recent reports of the amount of gasoline wholesaled in Pennsylvania revealed that the State is losing hundreds of thousands of dollars annually in nonreported and uncollected taxes on gasoline sales.

In Pennsylvania gasoline taxes are collected and reported to the State by the retail dealers but the taxes reported during July, August and September lacked $1,648,643.19 of totaling what they should have based on the wholesale gasoline sales. A total of 157,157,706 gallons was reported by wholesalers as distributed during the three months. This should have yielded $3,143,154.12 in taxes at 2 cents a gallon but only $1,494,510.93 was collected from retailers.

The report of wholesale sales was the first of that kind ever compiled in the State and immediately started State officials in to make a thorough check of retailers and wholesalers reports.

CALIFORNIA CONSUMPTION

SAN FRANCISCO, Calif., Dec. 14.—Based on tax receipt figures a total of 381,046,350 gallons of gasoline were consumed in California during the last three months of the fiscal year ended June 30. Figures just announced show that California tax receipts for the three months totaled $7,620,927. The tax is 2 cents a gallon.

OPENS HOUSTON OFFICE

HOUSTON, Texas, Dec. 14.—Divisional branch offices of the Pure Oil Co. will be established at Houston soon to handle the sale of the company's products in a part of south Texas. C. M. Lamason of Dallas will be in charge. It is understood the company is considering transportation of oil products from Pennsylvania to Beaumont for distribution in Texas and Louisiana in steamers which carry crude from Port Neches to the Pennsylvania plant.

TO SELL LUB PLANT

HOUSTON, Tex., Dec. 14.—By order of the Federal Court the lubricant plant of the La Porta Oil & Refining Co. at Morgan's Point has been ordered sold at auction to satisfy claims of creditors. The date for the sale has not been announced but no bids for less than $60,000 will be considered. John H. Hunter is receiver.

BUYS RADIANT CO

TOLEDO, Ohio., Dec. 14.—The Hickok Producing Co. of Toledo has purchased the controlling interest of B. F. Welty in the Radiant Oil Co. E. E. Bessire, vice president of the Radiant Co., will remain as vice president and general manager. The Radiant company has service stations in 71 cities of Ohio.

NEW MARKETING FIRM

CHICAGO, Dec. 14.—The Bodie-Hoover Petroleum Co. has been organized as a marketing firm specializing in motor lubricating oils. George Bodie, formerly of the Cosden Sales Corp., is president; Steve Hoover, of the Fred G. Clark & Co., is vice president and W. D. Simmons, of the Viscosity Oil Co., treasurer.

NEW CHIEF TECHNOLOGIST

CHICAGO, Dec. 14.—O. C. Smith, assistant superintendent of refinery operations of the Skelly Oil Co. at El Dorado, Kan., has been employed by the Graver Corp. of this city as chief technologist. Mr. Smith is a graduate chemist.

The Jobber is the Business Santa Claus

Probably, when you were a youngster, your beliefs in Santa Claus were just as strong as ours were. Once a year, all we had to do was to write this glorious old man of the snow country and he would come down and deliver anything we asked for.

The legend of his reindeer express was even more interesting than the present talk of air mail.

Of course, later on we found out that Dad, Mother and the bank account made up Santa Claus.

And then later on we got to wondering how it was that we could buy German-made toys in the home-town department store.

The answer to that was the jobber—and in the jobber you have a Santa Claus—the business Santa Claus.

Dealers write the jobber much in the same way we wrote Santa Claus. It is up to the jobber to supply dealers with merchandise coming from any part of the world.

By doing this, the jobber saves the dealer the complications and delays of placing individual orders with as many manufacturers.

This service, in turn, saves a manufacturer from endless expensive detail in filling orders coming from variously located dealers.

It is a service that establishes the jobber as an immediate quantity buyer for the manufacturer and a warehouse for the dealers. It insures the manufacturers' businesses and the dealers' services to the people in their locality. It saves enormous distributing expense and, therefore, keeps retail prices at a lower level.

In the oil industry you find the jobber functioning in a very similar way.

He buys in large quantities from different refiners supplying the different oils. He forms one central source of supply for the retailers and wholesale users of oil for commercial purposes. As in other businesses, he eliminates distributing cost. Obviously he does this at a profit both to the refineries and the retailers, yet for the benefit of the ultimate consumers.

Such is the service of the Acme Petroleum Company in the oil business. You will find it well worth your while to use it.

(This is the forty-third of informatory advertisements on the distribution problems with which the oil industry has to contend.)

ACME

Petroleum Company

Executive Offices: 624 S. Michigan Ave., Chicago

KANSAS CITY, MO. Land Bank Bldg. DALLAS, TEXAS Magnolia Bldg.

OIL STORAGE PLANTS

Over 7,000,000 Gallons Storage

West Tulsa, Okla. Riverdale, Ill.

(*Chicago Switching District*)

CHICAGO PRICES ARE NOT HOLDING; JOBBERS NOT BUYING FOR FUTURE

By J. B. Waldo

CHICAGO, Dec. 12.—The jobbers are still buying for immediate wants only and are not disposed to speculate on the future prices of gasoline. Refiners who sell to the marketers for resale state that they have received few orders for immediate or December delivery and are not accepting orders if offered, which they are not, over January. Most of the marketers bought some gasoline over December and are occupied in moving the gasoline already bought and not planning ahead right now. Some wonder if the record of last January is to be repeated. The market opened the month at 7 cents for Motors gasoline and closed at 11 cents, keeping right on going upward to 13½ cents. The question is that as the market is higher than 7 cents now and can hardly decline to that level during the remainder of the month will the prices advance 4 cents to 14¼ cents, will it advance to last year's price of 13½ cents or will it stay about where it is? It must largely depend on the accumulation of stocks or the extent of the consumption with regard to the refinery production.

Many jobbers have been asked to buy gasoline during the week and a good majority have replied that they should not purchase except what they were forced to buy before the fore part of January. Then they would be ready to talk but not until they had taken their inventory and found out where they stood.

The market as to prices has not held the promise of a week ago. Several larger refiners advanced their price for U. S. Motors gasoline to 10½ cents but were unable to hold the price as those owning gasoline bought at 9½ to 9¾ cents, finding they could not readily sell at the 10½-cent price, dropped back to 10¼ cents and some sales were made at an eighth of a cent less with one seller who operates on a rather unusual method offering a limited quantity at 10 cents to the trade. This is hardly, under the conditions, a weak market but simply results from marketing circumstances that are of a temporary nature unless repeated to a very considerable degree. Should any quantity of gasoline be offered at the 10-cent price it would in the long run result in breaking the market but everything seems to favor the idea that after the first part of January there will be a firm condition. The higher gravities which are not freely offered and are increasing in demand have held the price of a week ago with firmness and if anything are a little more firm. The same is true of natural gasoline. Exporters have orders to be accumulated for shipment and admit they have not secured all they need as the prices are too high and while the export movement of gasoline is light at this season, at reductions in costs the gasoline would be taken for export.

Kerosene Firm

Kerosene is firm at practically unchanged prices. The demand continues active, a general demand from all directions with no special feature. The export buying here has been small if any.

Naphthas for the paint and varnish industry and similar uses have moved slowly and there is some complaint that buyers are not taking their deliveries according to contracts. The paint industry is dull, a condition due to the bad weather.

Furnace Oils Steady

Furnace oils are moving steadily if not so very actively. In fact, there has been some accumulation of the heavier oils with the local tank wagon distributors finding the moderate temperature checks sales to their customers and their stocks are being renewed faster than consumed. Outside of the city the demand is better and there is a fair business in spot oils with the contract shipments fairly up to date although some have asked for a little delay.

Gas oil has moved fairly well at just about the old prices. One rather large sale is reported of a block of 100 cars of gas oil by a Chicago company to a refiner presumably for cracking and it is understood the price was 3½ cents, sellers' cars. There is fairly steady movement to the distributors of furnace oils and the gas companies are making large drafts against their contracts. Offers are fairly liberal but at a full price. Sales by refiners of 25-car lots and more over January at 3½ cents are reported and this is thought to be a very good buy. The price range to the trade is 3⅝ to 3¾ cents, according to grade, with a few sales claimed at 3⅞ cents for the light color, low cold test, sweet oil.

Fuel Oil Quiet

Fuel oil continues to advance at the refineries but the local market is very quiet so far as new business is concerned. There have been quite a number of inquiries for fuel oil over several months but the large companies are securing their needs at present at prices on contracts that are so far below any rate that could be quoted them at present as to make it verly nearly useless to quote a price based on today's markets or that the refiners would consider over a period. These contracts are in the case of several of the largest steel companies ample for their present needs and some have accumulations that will help them to get along until they are ready to place orders. Such large users as the Inland Steel Co., the Interstate Co. and others in that class are not in the spot market for any amount. According to various industrial reports the consumption of fuel oil is increasing by the various important industries which use it in quantities.

There are some local accumulations of fuel oil on the tracks of the truck distributors who are receiving oil on contracts and can find no place for it. Some of these were offering 18-22 refinery fuel oil in the yards or rolling at $1.20 a barrel, one concern having 35 cars which it wanted to sell.

The market for refinery oil continues to be quoted at $1.25 for 18-22, $1.30 for the 24-26 and $1.35 for the 26-30 gravity, these being bottom prices. Some 28-32 oil was offered at $1.45 and this is practically a gas oil price and as a matter of fact the prices of the higher gravities of refinery fuel oil are now so nearly the price of gas oil that sellers here are recommending that the buyer pay a few cents more a barrel and buy gas oil instead of the high gravity fuel oil. Most of this class of oil is wanted for the East and is for special uses for which a gas oil would be just as good or better. In the Ohio districts the quotations made by the local refiners on fuel and gas oil are much more on a level with the Group 3 prices and quotations made by sellers of the latter oil are withing range and some small spot business is being done.

The Smackover situation shows little change. The offerings continue plentiful and prices are being held close to $1 a barrel although the low prices will not stimulate consumption. There are just about so many users of Smackover fuel and if low costs would increase the number it would have done so before this. There are considerable quantities of Smackover fuel in the yards here and the situation is none too good yet it seems unnecessary. It is certainly a curious commentary on the production in large quantities of a grade of oil for which the limits of consumption at least in certain seasons and under certain conditions are easily reached. It is not as prepared at present, a competitive oil and if submitted to additional processes which might improve its salability there would be additional cost. Smackover on

the basis of refinery fuel oils and of bunker oil on the Gulf Coast should be selling at at least $1.15 per bbl.

Lubs Unchanged

Lubricating oils are practically unchanged with the generally quiet market. There is, however, considerable business being done in contracts for supplies for the coming season. The spot demand for motor oils is seasonable. The industrial demand is not very active right now, some of the distributors who make a specialty of that business calling the business dull. Prices are firmly held and the continued advances in the posted prices of Pennsylvania crudes gives the lubricating oil situation a firm tone.

Tank wagon prices have not been generally changed over the territory. What changes have been made have been made in the adjustment of prices where the rates have been reduced below normal. In several of these smaller places the prices have been restored and the price structure over the territory is gradually being ironed out. Some dealers believe the leaders are only waiting for a crude advance to increase the posted prices.

WORN-OUT SPARK PLUG OFTEN AFFECTS MILEAGE

In endeavoring to secure the maximum amount of mileage per gallon of gasoline, says the Shell News Letter, the very best grade of motor fuel available will not produce satisfactory results if the mechanical condition of any part of the automobile is in bad shape. Often the mechanical adjustment of an automobile will get out of order so gradually that the motorist will not notice it. In a great majority of cases worn-out spark plugs are causing the trouble. It is stated on trustworthy engineering authority that every spark plug should be replaced at the end of 10,000 miles of operation, or even sooner where driving conditions have been particularly exacting, as the effect of driving with old plugs is just the same as driving with a retarded spark.

As every well informed motorist knows, driving with a retarded spark is one of the quickest methods of overheating an engine and of wasting large quantities of gasoline. A deteriorated spark plug has the effect of making a motorist pay 10, 20 or 25 per cent more for gasoline and oil than would be necessary with new spark plugs. In using old worn-out plugs, the exhaust is shooting good power into the air in the form of only partially burned gas, and is greatly increasing crankcase oil dilution. Spark plugs lose their efficiency so gradually that it isn't noticed. They continue to fire, but their weakened spark wastes gas and oil every mile the car is driven, decreases the efficiency of the entire engine and, as a result, increases the wear on the engine's operating parts. Badly worn spark plugs reduce pickup, speed and power of a motor very materially.

NAMES NEW CHIEF ON MINERAL STATISTICS

WASHINGTON, Dec. 12.—Secretary Hoover has announced the establishment of an economics branch of the Bureau of Mines, and named C. P. White, now chief of the coal division of the Bureau of Foreign and Domestic Commerce to take charge.

This is the first step in the reorganization of the Bureau of Mines, which, together with the division of mineral statistics, was transferred last summer from the Department of the Interior to the Department of Commerce. This new branch will embrace the division of mineral statistics and there will be transferred from the Bureau of Foreign and Domestic Commerce to the new branch the major work of that bureau on petroleum, coal and other minerals.

The scientific work of the Bureau of Mines will continue under the direction of D. A. Lyon, who will act as heretofore in the position of assistant director in charge of the technologic work of the bureau.

ENCROACHMENT ON KEROSENE MAY AFFECT PRICE OF GASOLINE

By N. O. Fanning

NEW YORK, Dec. 12.—Contrary to expectations that had been entertained in some quarters, there was no change in the gasoline tank wagon market on the Atlantic Seaboard during the past week. Kerosene, however, continued to forge ahead, an advance of one-half cent per gallon being put in force throughout the eastern territory.

In New York and New England kerosene is selling at 15 cents per gallon on a tank wagon basis, 2 cents below the tank wagon price of gasoline. In New Jersey and most States south of that, the difference between gasoline and kerosene is only 1 cent, the gasoline price being 15 cents, and kerosene 14 cents.

To many eastern oil market observers the movement of kerosene prices up to the level of gasoline is regarded as of tremendous economic significance. They point out that because of the nature of refining the prices of the various oil products must bear some relation to each other, even though it is admitted each has its own particular market and its value in relation to that market. Each barrel of crude oil refined produces not just one of the important petroleum products, but all of them, in varying proportions. For this reason the observers believe that the strength of kerosene must sooner or later have some effect upon the price of gasoline, and they are interested even now in studying what the movement in kerosene really means.

One theory advanced in regard to the strength in kerosene is that it is not due intrinsically to any great increase in demand for kerosene as such, but is caused by the greater use of products such as furnace oil, Diesel oil and gasoline, production of which is increasing to the extent of encroaching on the supply available as kerosene for lighting and heating.

Greater efficiency in refining has enabled refiners to obtain gasoline from lower grades of oil which formerly yielded a higher percentage of kerosene. Furnace oil, now used widely in domestic oil burners, is in reality a crude kerosene, and its use naturally takes so much from the source of kerosene production.

It is stated confidently in some well-posted quarters that ultimately kerosene, as such, will cease to be a major oil product. This, in short, is the explanation of the strength in kerosene, and seems to warrant at least some consideration.

Gasoline Firm

Looking upon the strength of kerosene as not intrinsically due to much larger consumption of kerosene as such, the failure of gasoline to advance is not so hard to understand. The demand for gasoline has been unusually good of late, and it had been thought that the tank wagon price would go up before this. A month ago, however, a lower market was expected and that failed to materialize.

It now seems, therefore, that the gasoline market may follow a middle course for the time being, and continue steady. Although consumption is improving, and strength in prices might be expected for that reason, it is now easy to increase gasoline production by means of cracking, which would tend to restrict advances.

The gasoline situation on the Atlantic Seaboard, from the retailers' viewpoint, is good. Price cutting has subsided to a large extent. The large number of retail stations would lead to the belief that excessive competition might develop, but this so far has failed to appear. All of the big marketers seem to be maintaining similar tank wagon or retail prices. It is apparent that present gasoline supplies are in strong hands.

Crude Situation Better

Local refiners point to the improvement in the crude oil situation as an argument for steady prices for all major petroleum products. If present stocks had been excessive, they say, the market would have broken during the last few weeks. Crude oil, and especially light crude, is difficult to obtain at current quotations.

Gas and Fuel Oil

Gas oil and fuel oil are firm. An advance of one-quarter of a cent per gallon occurred in some of the lower grades of gas oil during the week.

Bunker oil and Diesel oil are both firm. Marketers are keeping to current quotations and seem to have no difficulty in meeting demands. Stocks seem to be ample and the supply coming in is much improved now, especially the importation of heavy crudes and fuel oil from Mexico.

Lubricating Oils

The market for lubricating oils remains firm. Consumption is improving materially and the some local marketers report low stocks, especially of cylinder oils. There are still some weak spots in the industrial demand for lubricants, notably the textile industry, which is said to be running on a restricted basis. It is said some local marketers are bidding up certain grades of Pennsylvania lubricants.

Red and pale oils are still in small demand, but prices are holding steady in sympathy with a stronger market on the Gulf Coast.

Paraffin wax is quiet, with no large new business reported during the week. Prices are unchanged but holding firm.

The petrolatum market also is quiet and prices are unchanged.

Export Market

Little change has occurred in the export situation during the past week. The movement of petroleum products from New York was somewhat restricted. Exports of gasoline in cases increased to a little more than 1,000,000 gallons, but kerosene shipments in cases continued small, amounting to only 611,500 gallons.

Crude oil really provided the only feature of the export market, strange to say. Shipments of crude oil in barrels during the week amounted to 313,200 gallons, which figure is about the average for the month. Most of this crude oil goes either to Spain or France and is for use in refineries in those countries.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
Gasoline:	Dec. 9	Dec. 2	Nov. 25
Bulk	.....	.....	1,175,970
Barrels	.....	25,000	.....
Cases	1,069,340	174,000	2,442,480
Kerosene:			
Bulk	.....	.....	1,315,306
Cases	611,500	661,770	764,980
Fuel oil:			
Cases	.....	.....	15,000
Lubricating oil:			
Bulk	.....	1,694,123	327,845
Barrels	539,850	1,155,300	1,247,350
Paraffin wax:			
Bags (lbs.)	671,400	2,281,620	.....
Barrels (bbls.)	.....	1,001	.....
Petroleum coke:			
Bulk	.....	.....	2,800,000
Crude oil:			
Barrels	313,200	262,550	364,200

Figures for exports include barrel and case shipments of 500 barrels, 1,000 cases, or more.

Tanker Charter Market

The tanker chartering market was extremely quiet during the past week. The only fixture reported was that of the tanker Gloxinia (British), chartered to carry 5,000 tons of lubricating oil from New York to the United Kingdom or Continent, at 23 shillings per ton, February loading.

Tanker rates have improved materially during the past week. Fixtures in the Coastal or Mexican trade have been reported at 26 cents per barrel for crude or fuel oil, against a recent low of 18 cents. In the transatlantic trade, rates have advanced about 10 per cent.

Oil Receipts Increase

A much heavier movement of oil toward the Atlantic Seaboard appears to be under way, receipts during the week ended December 9 averaging 477,000 bbls. daily, according to the estimate made by The Oil and Gas Journal. The preceding week the movement averaged 517,000 bbls. daily. During November the average was only 387,000 bbls. daily.

The improvement in receipts is partly attributed to increased consumption of fuel oil and broader refining operations. The receipts from the Gulf Coast and imports, particularly, have improved.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	Dec. 9	Dec. 2	Nov. 25
Gulf Coast	326,000	319,000	239,000
Pacific Coast	59,000	18,000	35,000
Imports	92,000	180,000	36,000
Total	477,000	517,000	310,000

Daily Averages by Months				
1925:	Gulf	Pacific	Imports	Total
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000
May	312,000	81,000	145,000	538,000
April	353,000	78,000	101,000	532,000
March	273,000	82,000	135,000	490,000
February	262,000	51,000	147,000	460,000
January	311,000	77,000	133,000	521,000
1924:				
December	306,000	83,000	85,000	474,000

The foregoing estimates are based upon the carrying capacity of incoming oil-laden tankers.

Export Kerosene Prices

Since September 1 export kerosene prices at this port have been advancing steadily and at present are 1¾ to 2¼ cents per gallon higher than on that date.

Export gasoline prices, on the other hand, have changed but once and that was a reduction of one-half cent per gallon.

The following table shows dates of changes and new prices of export kerosene and gasoline in cases at New York since September 1 (cents per gallon):

		Kerosene	
	Navy Gasoline	Stand. White	Water White
Prices Sept. 1, 1925	27.65	16.15	17.15
September 19	....	16.40	17.40
September 30	....	16.65	17.65
October 14	27.15	....	....
October 20	....	16.90	17.90
November 3	....	17.15	18.15
November 21	....	17.40	18.40
November 25	....	17.65	18.65
December 4	....	17.90	18.90
December 11	....	....	19.40

Altogether there have been eight advances in the price of export kerosene since September 1, the first advance being on September 19.

FRANKLIN ENGINE CO. GRANTED INJUNCTION

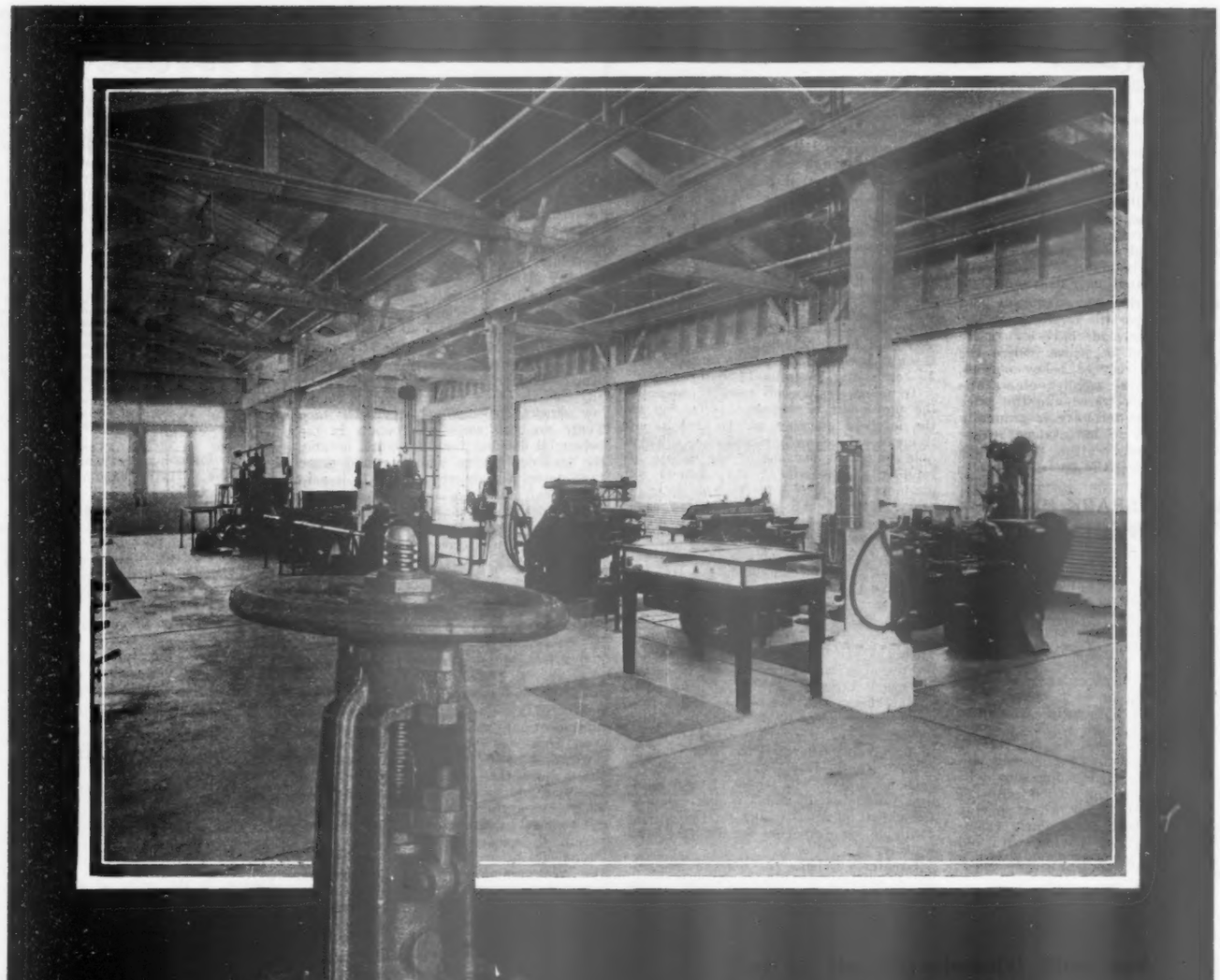
An injunction against the Weber Engine Co., of Kansas City, Mo., restraining it from manufacturing engines infringing certain patents owned by Franklin Valveless Engine Co., has been granted in the District Court of the United States, western division of the western district of Missouri. The decree by Albert L. Reeves, judge, in substance is as follows: Plaintiff is the owner of patents Nos. 1105585, granted July 28, 1914; Nos. 1203807, granted November 7, 1916; Nos. 1349630, granted August 17, 1920, and all rights thereto and thereunder. That said patents and claims thereof are valid and were infringed by defendant; that its defendants, agents, attorneys and workers, and each of them are forever enjoined from making, using or vending the invention of said letters patent.

SABINE-AMERADA SUIT

HOUSTON, Tex., Dec. 14.—Suit for damages involving $600,000 has been filed in the Federal court here by the Sabine Oil Corp. against the Amerada Petroleum Corp. The case was transferred from the State district court at Orange. The plaintiff claims the defendant company failed to properly develop 20 acres of land in the Orange Pool, asserting offset wells drained the sands under the 20 acres.

H. E. SMITH PROMOTED

Herbert E. Smith, general sales manager of the United States Rubber Co., has been elected a second vice president of the company in general charge of sales activities of all commodities except tires, succeeding George H. Mayo, retired.



HUGHES
VALVES

Brief Items for Plant Operators

DETERMINING THE MOLECULAR WEIGHT OF PETROLEUM PRODUCTS

*By W. R. Ormandy, D.Sc., F.I.C., F.C.S., and E. C. Craven

In the course of some work involving the determination of the molecular weight of petroleum fractions by the Victor Meyer method it was noticed that erratic results were obtained when the temperature of the bulb was high. Since for petroleum spirits having an end point of about 200 degrees Centigrade, it is necessary to use a temperature of say 250 degrees Centigrade to ensure complete vaporization in a reasonable time some determinations were made of the influence of the influence of the temperature on the results obtained with various bodies.

In some cases the Victor Meyer tube was heated in an electric furnace, but experiments were also made heating by the vapor of boiling liquids in the usual manner.

The following results were obtained for molecular weights. Complete vaporization was assumed to have taken place when the displaced air appeared to remain constant over half a minute or so. The figures given are in most cases the mean of two or more determinations.

In Electric Furance

Temp. °C.	Heptane	Shell	Pratt's	Benzene
200	102	100	97	77
220	73	96	96	76
250	79	98	95	78
265	74	80	78	75
275	70	...	...	...
*275 plus porous pot	78	...	...	...

*A few tiny fragments of porous earthenware were put into the tube in which the heptane was weighed.

In Vapor Bath

°C.					
183	(aniline)	100	96	103	78
218	(naphthalene)	97	98	99	78
238	(quinoline)..	73	99	99	78
285	(B-naphthol).	75	85	86	78

It would appear from the above figures that heptane is the most easily affected of the above bodies, low results being obtained at temperatures above 220 degrees Centigrade. The two petrols appear to be more stable, withstanding some 250 degrees Centigrade, while with benzene, as might be expected, there is no evidence of any effect up to the highest temperatures employed.

Effect of Cracking

It was thought at first that these effects were due solely to the cracking of the liquids since it was observed that the displacement of air took place in distinct jerks and a slight brown film, presumably "carbon," was left on the small tubes in which the liquids were weighed (benzene is, of course, excepted from all these remarks). Further work has shown that, while cracking does undoubtedly take place, either this is accentuated by the presence of air or actual combustion of a portion of the hydrocarbons occurs. Be this as it may, it would appear that the bulk of the action occurs while the bodies are in the liquid state. This is shown to some extent by the experiment with heptane in which a little piece of porous pot was put into the weighing tube. It was hoped that if the heptane would boil off readily normal results would be obtained. While this was not the case, there was obviously some improvement. The cracking action, moreover, does not seem to increase with rise of temperature above the critical, but the molecular weights obtained are more or less of the same order. This would indicate that the bulk of the cracking action is over in a comparatively short time, and hence while the body under test is in the liquid state.

The following tests on heptane indicate this and also the effect of replacing the air in the Victor Meyer apparatus with other gases.

Temp. °C.	Gas	Mol. wt.
250	Coal gas	95
317	Air	85
317	Coal gas	103
320	Carbon dioxide	103
375	Air	79
375	Coal gas	101

Some experiments were made in which the rate of air displacement was noted.

A comparison was made with Red Line petrol of the results obtained by the Victor Meyer and Raoult methods. By the former method using aniline and naphthalene the results were 101 and 100, respectively. For the freezing-point method phenol was used.

% petrol added =c.	Lowering of f. pt. =dO.	c/dO.
1.99	1.17	1.70
2.52	1.47	1.72
4.17	2.28	1.83
4.93	2.67	1.85

Exterpolating to zero concentration gives =1.60. Taking K=74 gives mol. wt.=118.

The question of the cracking in the Victor Meyer test is obviously part of the general question of the stability of motor fuels. When oxygen mixed with fuel vapors is passed over heated iron, formation of CO_2 can be detected to begin at fairly definite low temperatures. For heptane this temperature was 241 degrees Centigrade. This does not differ greatly from the Moore spontaneous ignition temperature—247 degrees Centigrade—nor from the 220 degrees Centigrade limit in the molecular weight experiments. With toluene under the same conditions, however, CO_2 was produced at 210 degrees Centigrade, nearly 400 degrees Centigrade below the spontaneous ignition temperature. These experiments were discontinued owing to explosions.

Temperature of Cracking

Attempts have also been made by the authors to determine the temperature at which cracking of a liquid fuel begins in an atmosphere of its own vapor. The fuel was dropped into a cavity in a steel block heated electrically. Arrangements were made for condensing the fuel vapors and for collecting any permanent gases formed in a gas burette. No result was obtained with Red Line petrol up to a temperature of 500 degrees Centigrade.

From these experiments the practical conclusion may be drawn that the use of coal gas or hydrogen atmosphere is advisable in determinations of molecular weights of petrols by the Victor Meyer method, and also some light is thrown upon the reactions which occur when the air atmosphere is not so replaced by hydrogen. The brown deposit on the weighing tubes may indicate that polymerization and asphalt formation take place, and, in addition, it appears to be clear that cracking or partial combustion takes place particularly while the spirit remains liquid, the vapors apparently being much more stable.

*Extract of paper read at meeting of Royal Society of Arts.

FIRST CRACKING UNITS FOR REFINERY AT ENID

Bolene Refining Co. of Enid has contracted with the Graver Corp. for the installation of two Jenkins cracking units. Work on the installation will begin immediately and will be completed within four months.

Terms of the contract call for the erection of one high pressure unit and one low pressure still. These will be the first cracking units to be installed by the Bolene Refining Co., which in the past has specialized in "straight run" products.

AMONG THE TECHNICAL MEN

Nineteen years of practical experience in chemistry, eleven years of which has been in the refining industry, is the record of W. E. Espy, chief experimental chemist of the Mid-Continent Petroleum Corp.'s refinery at West Tulsa.

W. E. Espy

Mr. Espy's oil chemistry work began with the Pierce Oil Corp., now the Pierce Petroleum Corp., St. Louis, as assistant and chief chemist in 1914. He was transferred to the Sand Springs, Okla., plant in 1917 as chief chemist, but a year later joined Cosden & Co., now the Mid-Continent Petroleum Corp., as assistant chief chemist.

After 4 years' service as assistant chief chemist, Mr. Espy was promoted to chief experimental chemist, the position he now holds.

From a youth Mr. Espy has been interested in chemistry. He began the study of that subject at a St. Louis night school before he had finished grammar school and after finishing the course in this school he went to work in the laboratories of the Missouri Pacific Railroad in 1906.

Remaining in the railroad laboratories, where he gained experience in general chemistry, until 1909, he then accepted a position as assistant chemist for Swift & Co. at its East St. Louis packing plant. After two years he was made chief chemist and later was chosen division superintendent of the fertilizer department, which position he held until he went with the Pierce Oil Corp.

Mr. Espy now is a member of the Committee D-2 Petroleum Committee of the American Society for Testing Materials and has been a councillor in the department of standards of tests of the National Petroleum Association since 1913. He was born at St. Louis on November 24, 1888.

CHANGES IN SHIPPING REGULATIONS DRAFTED

WASHINGTON, D. C., Dec. 14.—Suggested changes in shipping regulations to be presented by the Bureau of Explosives of the American Railway Association at the Interstate Commerce Commission offices at Washington on January 6, 1926, will include two amendments affecting handling of tank cars.

The first suggested amendment provides that all leaking cars shall be properly designated as such and if temporarily repaired they shall be so labeled. The second proposed amendment provides that after a tank car is unloaded the dome cover must be securely replaced by the use of a bar; the outlet valve reducer and outlet valve cap by the use of a wrench having a handle at least 48 inches long; and outlet valve cap pipe plugs, heater coil inlet and outlet pipe caps, end plugs and plugs or caps of other openings, by the use of a suitable tool.

In addition, dome covers, outlet valve reducers, outlet valve caps, outlet valve cap pipe plug, heater coil inlet and outlet pipe caps, end plugs and plugs or caps of other openings must be securely in their proper places on empty tank cars prior to being offered for movement or when transferred to or from connecting lines in interchange.

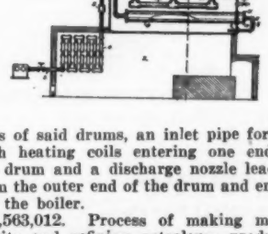
INSTALLS CROSS UNITS

HOUSTON, Tex., Dec. 14.—Installation of the five units of the Cross cracking process is nearing completion at the Magnolia Petroleum Co. plant. The units are expected to be in operation by January 1.

Recent Patents

1,562,690. Still. Max F. De Bajligethy, Houston, Tex. Filed June 20, 1922. Serial No. 569,614. Three claims. (Cl. 196—119.)

1. The combination with a still including a boiler, of a plurality of reacting drums mounted therein, and one end of which projects outside of the boiler, a detachable head carried by the outer



ends of said drums, an inlet pipe formed with heating coils entering one end of the drum and a discharge nozzle leading from the outer end of the drum and entering the boiler.

1,563,012. Process of making motor spirits and refining petroleum products. Benjamin T. Brooks, Bayside, N. Y., assignor, by mesne assignments, to Carbide and Carbon Chemical Corp., a corporation of New York. Filed May 1, 1918. Serial No. 231,802. Two claims. (Cl. 196—40.)

The process of making motor spirit which comprises cracking a petroleum product under conditions giving a material rich in olefins, subjecting this material to the action of a sulphuric acid equivalent to strong aqueous H_2SO_4 of

(Continued on Page 137)

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Dec. 15		Dec. 8		Dec. 1	
OKLAHOMA (Group 3)—						
50-52 450 end point	.09	.09¼	.09	.09½	.09	.09¼
56-58 450 end point	.09½	.09⅝	.09½	.09¾	.09½	.09¾
58-60 437 end point (U. S. Motor)	.09⅞	.10	.10¼		.10¼	.10½
60-62 400 end point	.11⅜	.11⅝	.11⅜	.12	.11⅜	.12
64-66 375 end point	.12⅜	.12½	.12⅝	.12⅞	.12½	.12⅝
68-70 350 end point	.13¼	.13½	.13½	.13¾	.13½	.13¾
KANSAS—						
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10½	.10¾
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.08¾	.09	.08¾	.09	.08¾	.09
50-52 440 end point (Naphtha)	.09	.09¼	.09	.09¼	.09	.09¼
56-58 450 end point	.09½		.09½	.09¾	.09½	.09¾
58-60 437 end point (U. S. Motor)	.09⅞	.10	.10¼		.10¼	
60-62 400 end point	.11¼	.11½	.11½	.11¾	.11⅝	.11¾
64-66 390 end point	.12¼	.12½	.12¼	.12½	.12¼	.12½
64-66 375 end point	.12½	.12¾	.12⅝	.13	.12⅝	.12¾
68-70 360 end point	.13	.13¼	.13½		.13½	
NORTH LOUISIANA—						
56-58 450 end point	.10	.10¼	.10	.10¼	.10	.10¼
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10½	.10¾	.10½	.10¾
60-62 400 end point	.11¾	.12	.12	.12¼	.12	
64-66 390 end point	.12¼	.12½	.12¾	.13	.12½	.12¾
64-66 375 end point	.12½	.12¾	.13	.13½	.12¾	.13
ARKANSAS—						
58-60 450 end point	.10¼	.10½	.10¼	.10½	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10½	.10¾	.10½	.10¾
64-66 375 end point	.12½	.12¾	.12¾		.12¾	
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.10	.10¼	.13¼	.13½	.13¼	.13½
PENNSYLVANIA—						
52 Naphtha	.11¼	.11½	.11¼	.11½	.11	.11¼
54 Naphtha	.11½	.12	.11½	.12	.11¼	.11½
56 Naphtha	.12	.12¼	.12	.12¼	.11½	.11⅝
58 Naphtha	.12½	.12¾	.12½	.12⅝	.12	.12¼
60 Gasoline	.13½	.13⅝	.13½	.13¾	.12⅝	.13
62 Gasoline	.14	.14½	.14	.14½	.13½	.14
64 Gasoline	.15¼	.15½	.15¼	.15½	.15	.15¼
66 Gasoline	.16¼	.16½	.16¼	.16½	.16	.16¼
68-70 Gasoline	.20	.20½	.20	.20½	.19½	.20
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.09	.09½	.09	.09½	.09	.09½
CHICAGO DIST. (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¼	.09½	.09¼	.09½	.09¼	.09½
56-58 450 end point	.09½	.09¾	.09½	.09¾	.09½	.09¾
58-60 437 end point (U. S. Motor)	.10	.10⅛	.10¼	.10½	.10¼	
60-62 400 end point	.11½		.11⅜	.12	.11⅜	.12
64-66 375 end point	.12¼	.12¾	.12⅝	.12⅞	.12¾	.13
68-70 360 end point	.13¼	.13½	.13½	.13¾	.13¾	.14

*Colorado points.

NATURAL GASOLINE

	Dec. 15		Dec. 8		Dec. 1	
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. %	.10¾	.11	.11¼		.11¼	
Grade A, 72-79.9, 375 end point, rec. 90%	.10¾	.11	.11¼		.11¼	
Grade Double B, 84-92, 375 e.p., rec. 85%	.10¼		.10¼	.10½	.10¼	.10½
Grade B, 76-83.9, 375 end point, rec. 85%	.10¼		.10¼	.10½	.10¼	.10½
Grade C, 80-90, 375 end point, rec. 78%	.09½		.09½		.09¼	
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.11		.11¼		.11¼	.11½
Grade A, 72-79.9, 375 end point, rec. 90%	.11		.11¼		.11¼	.11½
Grade Double B, 84-92, 375 e.p., rec. 85%	.10¼	.10½	.10¼	.10½	.10¼	.10½
Grade B, 76-83.9, 375 end point, rec. 85%	.10¼	.10½	.10¼	.10½	.10¼	.10½
Grade C, 80-90, 375 end point, rec. 78%	.09½		.09½		.09¼	.09½
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%	.11⅜	.12	.11⅜	.12	.11½	.12
Grade B, 76-83.9, 375 end point, rec. 85%	.11¼	.11½	.11¼	.11½	.11¼	.11½
Grade C, 80-90, 375 end point, rec. 78%	.10¼	.10½	.10¼	.10½	.10	.10¼
CALIFORNIA—						
78-85 absorption, 360-390 end point	.13	.13½	.13	.13½	.13	.13½
78-84 compression, 350 end point	.13	.13½	.13	.13½	.13	.13½
CHICAGO DIST. (Based on Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.11	.11¼	.11¼	.11½	.11¼	.11½
Grade A, 72-79.9, 375 end point, rec. 90%	.11	.11¼	.11¼	.11½	.11¼	.11½
Grade Double B, 84-92, 375 e.p., rec. 85%	.10¼	.10½	.10¼	.10½	.10	.10¼
Grade B, 76-83.9, 375 end point, rec. 85%	.10¼	.10½	.10¼	.10½	.10	.10¼
Grade C, 80-90, 375 end point, rec. 78%	.09¼	.09½	.09	.09¼	.09	.09¼

MOTOR NATURAL GASOLINE (BLENDS)

	Dec. 15		Dec. 8		Dec. 1	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09¾	.10	.09¾	.10	.09¾	.10
64-66 437 end point	.10¼	.10½	.10¾	.11	.10¾	.11
68-70 430-435 end point	.10½	.10¾				
NORTH TEXAS—						
58-60 450 end point	.09½	.09¾	.09½	.09¾	.09½	.09¾
PENNSYLVANIA—						
*60-62	.13½	.13¾	.13½	.13¾	.13½	.13¾
*64-66	.13¾	.14	.13¾	.14	.13¾	.14
*66-68	.13¾	.14	.13¾	.14	.13¾	.14
*68-70	.14	.14½	.14	.14½	.14	.14½
CHICAGO DIST. (Based on Group 3)—						
60-62 450 end point	.09¾	.10	.09¾	.10	.09¾	.10
64-66 437 end point	.10½	.10¾	.10¾	.11	.10¾	.11

*At Sistersville, W. Va.

BURNING OILS

	Dec. 15		Dec. 8		Dec. 1	
KANSAS—						
41-43 water white Kerosene	.05¼	.05½	.05¼	.05½	.05¼	.05½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.05	.05¼	.05	.05¼	.05	.05⅛
42-44 water white Kerosene	.05½		.05½		.05½	
40-41 prime white Kerosene	.04⅞	.05	.04⅞	.05	.04⅞	.05
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05½	.05¾	.05½	.05¾	.05½	.05¾
42-44 water white Kerosene	.05¾	.06	.05¾	.06	.05¾	.06
ROCKY MOUNTAIN STATES—						
*40-44 water white Kerosene	.08	.08⅛	.08	.08⅛	.08	.08¼
NORTH TEXAS—						
41-43 water white Kerosene	.05⅜	.05½	.05⅜	.05½	.05½	.05¼
40-42 prime white Kerosene	.05	.05⅛	.05	.05⅛	.04¾	.05
41-43 prime white Kerosene	.05¼	.05½	.05¼	.05½	.04⅞	.05
42-44 water white Kerosene	.05½	.05¾	.05½		.05½	
ARKANSAS—						
41-43 water white Kerosene	.05¾	.05⅞	.05¾	.05⅞	.05¾	.05⅞
42-44 water white Kerosene	.06		.06		.06	
PENNSYLVANIA—						
43 Kerosene prime white	.07¼	.07½	.07¼	.07½	.07	.07¼
45 Kerosene water white	.07½	.07¾	.07½	.07¾	.07¼	.07½
46 Kerosene water white	.08	.08½	.08	.08½	.07½	.07¾
47 Kerosene water white	.08¾	.09	.08¾	.09	.08	.08¾
34 Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
34 Sundebloom Neutral	.08	.09	.08	.09	.08	.09
36 Miners' Neutral	.06¾	.07	.06¾	.07	.06¾	.07
300 Mineral Seal	.07¾	.08	.07¾	.08	.07¾	.08
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.06½	.07	.06½	.07	.06½	.07
Engine distillate, 42-44 450 end point	.06¼	.06½	.06¼	.06½	.06¼	.06½
CHICAGO DIST. (Based on Group 3)—						
41-43 water white Kerosene	.05⅛	.05¼	.05⅛	.05¼	.05⅛	.05⅜
42-44 water white Kerosene	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝

*Colorado points.

FUEL OILS

	Dec. 15		Dec. 8		Dec. 1	
KANSAS—						
24-26 Fuel Oil	1.40	1.50	1.40	1.50	1.30	1.35
32-36 Gas Oil	.03¾	.03⅞	.03¾	.03⅞	.03⅝	.03¾
38-40 Distillate	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.22½	1.25	1.22½	1.25	1.20	1.22½
22-26 Fuel Oil (sellers' cars)	1.25		1.25		1.22½	1.25
24-26 Fuel Oil (buyers' cars)	1.25	1.30	1.27½	1.30	1.25	1.30
24-26 Fuel Oil (sellers' cars)	1.25	1.30	1.27½	1.30	1.25	1.30
28-30 Fuel Oil (sellers' cars)	1.35	1.40	1.35	1.40	1.35	
32-36 Gas Oil (dark)	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
32-36 Gas Oil (light)	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
36-38 Distillate	.03⅞	.04	.03⅞	.04	.03¾	.04
38-40 Straw Distillate	.04	.04⅛	.04	.04¼	.04	.04¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.55	1.65	1.50	1.60	1.35	1.45
26-30 Fuel Oil	1.75	1.80	1.60	1.65	1.45	
32-36 Gas Oil (dark)	.03¾	.03⅞	.03⅞	.04	.03½	.03⅝
32-36 Gas Oil (light)	.03⅞	.04	.04	.04⅛	.03½	.03⅝
38-40 Straw Distillate	.04	.04⅛	.04⅛		.03⅞	.04
NORTH LOUISIANA—						
18-20 Fuel Oil	1.05	1.10	1.05		1.05	1.10
32-36 Gas Oil	.03½	.03¾	.03¾		.03¾	
ARKANSAS—						
38-40 Distillate	.04	.04¼	.04	.04¼	.04	.04¼
32-36 Gas Oil	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
22-26 Refinery Fuel Oil	1.25		1.25		1.25	
GULF COAST (South Texas)—						
Gas Oil	.04½	.04¾	.04½	.04¾	.04½	.04¾
Fuel Oil	1.50	1.60	1.50	1.55	1.55	1.60
PENNSYLVANIA—						
30-34 Fuel Oil	.05½	.05¾	.05½	.05¾	.05½	.05¾
36-40 Fuel Oil	.06	.06¼	.06	.06¼	.06	.06¼
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-35 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tidewater)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel Oil	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DIST. (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.30	1.35	1.30	1.35	1.30	1.35
18-22 (El Dorado)	1.25	1.30	1.25	1.30	1.25	1.30
18-20 (Smackover)	1.00	1.05	1.00	1.02½	1.00	1.05
32-36 Gas Oil	.03⅝	.03¾	.03⅝	.03¾	.03⅜	.03¾
36-38 Distillate	.03⅞	.04	.03⅞	.04	.03⅝	.03⅞
38-40 Straw Distillate	.04	.04¼	.04	.04¼	.04	.04¼

LUBRICATING OILS AND WAX

	Dec. 15		Dec. 8		Dec. 1	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.05	.05¼	.05	.05¼	.05	.05¼
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
150 vis., 3 color, 20-25 cold test	.08½	.09	.08½	.09	.08½	.09
150 vis., 4 color, 20-25 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 3 color, 23-28 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
200 vis., 3 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
200 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
220 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
220 vis., 4 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
240 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.08¾	.09¼	.08¾	.09¼	.08¾	.09¼
180 vis., 6 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 6 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
220 vis., 5 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 6 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 6 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

Cylinder Stocks:						
180-200 vis., S. R. green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
190-200 vis., S. R. green, 40-45 cold test	.07	.07½	.07	.07½	.07	.07½
170-190 dark green, 40-45 cold test	.05½	.06	.05½	.06	.05½	.06
600, steam refined	.06	.08	.06	.08	.06	.08
190-200 vis. @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35
200-210 vis. @ 210 "E" Bright Stock	.30		.30		.30	
150 vis. @ 210 "E" Bright Stock	.27		.27		.27	
150 vis. @ 210 "D" Bright Stock	.28		.28		.28	
Waxes:						
124-126 White Crude Scale Wax	.05½		.05½		.05½	
PENNSYLVANIA—						
150, 3 color	.18¾		.17¼		.17¼	
180, 3 color	.22½		.22½		.21½	
200, 3 color	.25		.24½		.24¼	
220, 3 color	.27½		.27		.27	
600, steam refined	.18		.17		.17	
635, steam refined	.22		.22		.22	
650, steam refined	.24		.24		.24	
600, Pennsylvania flash	.27		.27		.27	
630, Pennsylvania flash	.35		.35		.35	
*550, E filtered	.19½		.19½		.19½	
600, E filtered	.21½		.20½		.20½	
*600, E filtered	.22½		.21		.21	
600, D filtered	.26		.26		.26	
550, E filtered	.19		.19		.19	
550, D filtered	.22½		.22½		.22½	
Pennsylvania Bright Stock	.39½		.39½		.39½	
122-124 White Crude Scale Wax	.05⅞	.06	.05⅞	.06	.05⅞	.06
†124-126 White Crude Scale Wax	.06	.06¼	.06	.06¼	.06	.06¼
GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07	.08	.07	.08	.07	.08
No. 2½ color, 150 vis., pale oil	.09½	.10	.09½	.10	.09½	.10
No. 3 color, 200 vis., pale oil	.12	.12½	.12	.12½	.12	.12½
No. 3½ color, 300 vis., pale oil	.15½	.16	.15½	.16	.15½	.16
No. 3¾ color, 500 vis., pale oil	.18½	.19	.18½	.19	.18½	.19
No. 4 color, 750 vis., pale oil	.20	.20½	.20	.20½	.20	.20½
No. 1½ plus color, 150 vis., pale filtered	.21½		.21½		.21½	
No. 2 plus color, 200 vis., pale filtered	.23		.23		.23	
No. 2 color, 300 vis., pale filtered	.27		.27		.27	
No. 2½ color, 500 vis., pale filtered	.31		.31		.31	
No. 2½ color, 750 vis., pale filtered	.41		.41		.41	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.10½	.11
No. 5 to 6 color, 300 vis., red oil	.12	.12½	.12	.12½	.12½	.13
No. 5 to 6 color, 500 vis., red oil	.13½	.14	.13½	.14	.14½	.15
No. 5 to 6 color, 750 vis., red oil	.18	.18½	.18	.18½	.18	.18½
CALIFORNIA—						
130 pale, 2½-3 color	.12	.12½	.12	.12½	.12	.12½
200 vis., 2½-3 color	.15½	.16	.15½	.16	.15½	.16
300 vis., 3 -3½ color	.17	.17½	.17	.17½	.17	.17½
350 vis., 3½-4 color	.18½	.19	.18½	.19	.18½	.19
400 vis., 3½-4 color	.20	.20½	.20	.20½	.20	.20½
Red Neutrals:						
200 vis., 4½-5 color	.14	.14½	.14	.14½	.14	.14½
300 vis., 5 -6 color	.15	.15½	.15	.15½	.15	.15½
400 vis., 5 -6 color	.17	.17½	.17	.17½	.17	.17½
500 vis., 4½-5 color	.20	.21	.20	.21	.20	.21
500 vis., 6 -6½ color	.18	.19	.18	.19	.18	.19
600 vis., 6½ plus color	.19	.19½	.19	.19½	.19	.19½

*At Warren, Pa. †At New York City.

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Dec. 15	Dec. 8	Dec. 1
U. S. Motor Gasoline, 58-60 437	.12½	.12½	.12½
Export Gasoline, 64-66 Be.	.16	.15½	.15½
*Bunker Oil, 14-16 Be.	.1.65	*1.65	1.65
*Diesel Oil, New York City	.2.10	2.10	2.10
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.06¼	.06¼	.06¼
41-43 Kerosene prime white	.07	.07	.06¾

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	Dec. 15	Dec. 8	Dec. 1
58-60 Be. gravity, in cases	.27.15	.27.15	.27.15
Standard white Kerosene, in cases	.17.90	.17.90	.17.40
Water white Kerosene, in cases	.19.40	.18.90	.18.40
†Lubricating Oils (in bulk):			
Cylinder Stock, extra filtered, 600 bbls.	.34	.34	.34
Cylinder Stock, light filtered, 600 bbls.	.29	.29	.29
No. 1 White Neutral, .878 spec. grav.	.36	.36	.36
No. 5 Bright Stock, .897 spec. grav.	.40½	.40½	.40½
Special "A" red oil, .897 spec. grav., 170 vis.	.11½	.11½	.11½
No. 2 red oil, .903 spec. grav., 212 vis.	.12	.12	.12
No. 1 red oil, .905 spec. grav., 265 vis.	.13½	.13½	.13½
Polar red oil, .903 spec. grav., 295 vis.	.14	.14	.14
Pale oil, "25" .898 spec. grav.	.12	.12	.12
Pale oil, "28" .892 spec. grav.	.08	.08	.08
Paraffin Wax:			
120-122 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
125-127 a.m.p., per lb.	.06¼	.06¼	.06¼
130-132 a.m.p., per lb.	.06½	.06½	.06⅝
135-137 a.m.p., per lb.	.07¼	.07¼	.07¼
Petrolatum, in bbls., carload lots, per lb.:			
Amber	.03¾	.03¾	.03¼
Light amber	.03¾	.03¾	.03¾
Cream	.06	.06	.06
Lily white	.08	.08	.08
Snow white	.10	.10	.10

†All lub prices in barrels.

LOS ANGELES EXPORT PRICES

	Dec. 15		Dec. 8		Dec. 1	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor Gasoline, 54-56 437 end point	.07	.09	.07	.09	.07½	.09

CRUDE OIL PRICES

Arkansas and North Louisiana

Caddo, 38° and above	$1.95
35° to 37.9°	1.85
32° to 34.9°	1.75
Below 32°	1.65
Homer, 35° and above	1.75
32° to 34.9°	1.65
31° to 32.9°	1.55
Below 31°	1.40
Haynesville, 33° and above	1.65
Below 33°	1.55
El Dorado, 33° and above	1.65
Below 33°	1.55
Bull Bayou, 38° and above	1.75
35° to 37.9°	1.60
32° to 34.9°	1.45
Cotton Valley	1.10
De Soto	1.80
Crichton	1.60
Bellevue	1.65
*Stephens, Ark:	
Below 26°	1.20
26° and above	1.40

*Posted by Atlantic Oil Producing Co.

Smackover:

(Standard Oil Co. of Louisiana)

Below 24°	.85
24° to 24.9°	1.15
25° to 25.9°	1.20
26° to 26.9°	1.25
27° and above	1.30

(Atlantic Oil Producing Co.)

Below 23°	.90
23° to 23.9°	.95

Wyoming, Montana, New Mexico and Colorado

Rock Creek (Wyo.)	1.75
Salt Creek:	
29° to 29.9	1.23
30° to 30.9°	1.31
31° to 31.9°	1.39
32° to 32.9°	1.47
33° to 33.9°	1.55
34° to 34.9°	1.63
35° to 35.9°	1.71
36° to 36.9°	1.79
37° and above	1.87
Big Muddy	1.75
Mule Creek	1.25
Grass Creek (light)	1.90
Elk Basin	1.90
Lance Creek	1.90
Osage	1.90
Cat Creek (Mont.)	1.90
Sunburst (Mont.)	1.35
Lost Soldier	1.10
Greybull and Torchlight	1.90
Hamilton Dome	1.55
Hogback, (N. Mex.)	1.95
Artesia, (N. Mex.)	1.35
Florence (Colo.)	1.35

Lost Soldier and Lander based on contracts.

Oklahoma, Kansas, North and East Central Texas

*Prairie Oil & Gas Co. and other major purchasing companies except as noted.

28° to 28.9°	1.15
29° to 29.9°	1.23
30° to 30.9°	1.31
31° to 31.9°	1.39
32° to 32.9°	1.47
33° to 33.9°	1.55
34° to 34.9°	1.63
35° to 35.9°	1.71
36° to 36.9°	1.79
37° to 37.9°	1.87
38° to 38.9°	1.95
39° to 39.9°	2.03
40° to 40.9°	2.11
41° to 41.9°	2.19
42° to 42.9°	2.27
43° to 43.9°	2.35
44° to 44.9°	2.43

For crude under 28° gravity, bought only from producers having connections on November 1, 1925, Prairie Oil & Gas Co. pays on a basis of an 8-cent spread for each degree.

*Humble Oil & Refining Co.

(North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran.)

Below 28°	1.07

Other grades same as Prairie Oil & Gas.

*Magnolia Petroleum Co.

(Oklahoma, Kansas and Texas.)

Below 28°	$1.07

Other grades same as Prairie Oil & Gas Co.

Corsicana heavy	$1.05
Thrall	1.00

*The Texas Co.

(Oklahoma and Texas)

Below 28°	$1.07

Other grades same as Prairie Oil & Gas Co.

Panhandle:

(Posted by Kay County Gas Co.)

28° to 30.9°	1.05
31° to 33.9°	1.20
34° to 36.9°	1.35
37° to 39.9°	1.55
40° and above	1.55

Gypsy Oil Co.—

Bristow, Glenn Pool, Morris and Perryman:

25° to 25.9°	.91
26° to 26.9°	.99
27° to 27.9°	1.07

Other grades same as Prairie Oil & Gas Co.

Gulf Coast

Grade A	1.50
Grade B	1.25
Luling (Magnolia)	1.40
Laredo (Magnolia Petroleum Co.)	.85
Lockhart (Magnolia)	2.25
Rockdale-Minerva (Milam County)	1.25
Callihan (Live Oak-McMullen)	2.05
Webb, Jim Hogg, Zapata	1.15
*High Island	1.20

*Posted by Sun Oil Co.

*Somerset

Below 30°	1.25
30° to 32.9°	1.35
33° to 35.9°	1.80
36° to 38.9°	1.95
39° to 41.9°	2.10
42° and above	2.35

*Posted by Grayburg Oil Co.

Eastern States

Penna Grade Oil in New York Transit Lines	3.65
Bradford District Oil in National Transit Lines	3.65
Penna Grade Oil in National Transit Lines	3.45
Penna Grade Oil in Southwest Pa. Pipe Lines	3.45
Penna Grade Oil in Eureka Pipe Line Lines	3.50
Penna Grade Oil in Buckeye Pipe Line Lines	3.30
Cabell Grade Oil in Eureka Pipe Line Lines	2.10
Corning Grade Oil in Buckeye Pipe Line Lines	1.95
Somerset Medium Oil in Cumberland Pipe Line Lines	2.20
Somerset Light Oil in Cumberland Pipe Line Lines	2.35
Ragland Grade Oil in Cumberland Pipe Line Lines	1.15
Gaines	2.70
Lima	1.98
Wooster	2.00
Illinois	1.87
Indiana	1.78
Princeton	1.87
Plymouth	1.40
Waterloo	1.00
Oil Springs, Canada	2.45
Petrolia, Canada	2.38
*Western Kentucky, 36° and above	1.80
*Western Kentucky, 35° to 35.9°	1.70
*Western Kentucky, 32.9° and below	1.60
Cumberland, Barren and Monroe Counties (Kentucky), (Paragon Development Co.)	2.35

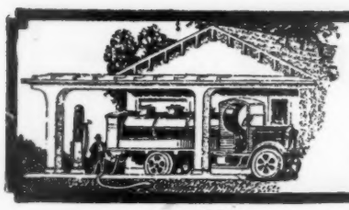
*Prices for Warren, Allen, Hancock, Simpson and Ohio Counties by Indian Refining Co.

Mexican Crude

*Tuxpam light (f.o.b. Mex. ports)	1.75
‡Panuco heavy (f.o.b. Mex. ports)	1.45
Tuxpam (New York)	2.25
Panuco (New York)	1.82

*Plus 30.45c tax. ‡16.94c tax.

(California Crude Prices on Page 134)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Dec. 15.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	16.0	18.0	...	11.0

Tank wagon prices on April 19, 1922; g. up 1½c; May 8, g. up 1c; June 27, g. and k. up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb.. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c; k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c.

Decatur, Ill.	11.0	13.0	...	11.5
East St. Louis	15.1	17.35	...	10.6
Joliet	16.4	18.4	...	11.7
Peoria	10.5	12.5	...	11.7
Quincy	16.2	18.2	...	11.3
Davenport, Ia.	18.5	20.5	2.0	11.9
Des Moines	16.5	17.5	2.0	11.9
Keokuk	18.5	20.5	2.0	11.9
Sioux City	18.0	20.0	2.0	11.5
Duluth, Minn.	15.5	17.5	2.0	12.6
Minneapolis	17.2	19.2	2.0	12.6
La Crosse, Wis.	19.2	21.2	2.0	12.1
Milwaukee	18.1	20.1	2.0	11.3
Madison	18.3	20.3	2.0	11.5
Detroit, Mich.	18.8	20.8	2.0	12.2
Grand Rapids	18.7	20.7	2.0	12.1
Saginaw	18.9	20.9	2.0	12.3
Evansville, Ind.	19.0	21.0	3.0	11.5
Fort Wayne	19.4	21.4	3.0	11.9
Indianapolis	19.2	21.2	3.0	11.7
South Bend	19.4	21.4	3.0	11.9
Fargo, N. D.	19.9	21.9	1.0	14.6
Huron, S. D.	16.0	18.0	3.0	13.1
Sioux Falls	18.0	20.0	3.0	12.6
*K. C., Mo.	17.9	19.9	3.0	10.3
*Springfield	18.8	20.8	3.0	11.2
*St. Louis	17.6	19.9	2.5	11.0
*St. Joseph	18.0	20.0	2.5	10.9
Wichita, Kan.	10.8	12.8	2.0	10.8
Bartlesville, Ok.	16.9	18.9	3.0	9.9

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 15.0.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of the Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons 1½ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Newark, N. J.	15.0	17.5	...	14.0
Atlantic City	15.0	....	...	14.0
Annapolis, Md.	17.0	....	...	13.5
Baltimore	17.0	20.0	2.0	11.0
Cumberland	17.0	20.0	2.0	14.0
Washington	17.0	20.0	2.0	13.0
Norfolk, Va.	18.0	21.0	3.0	14.0
Petersburg	18.0	....	3.0	14.0
Danville	18.0	....	3.0	14.0
Richmond	18.0	21.0	3.0	14.0
Roanoke	18.0	21.0	3.0	14.0
Keyser, W. Va.	18.5	....	3.5	14.0
Charleston	18.5	21.5	3.5	14.0
Parkersburg	18.5	21.5	3.5	14.0
Wheeling	18.5	21.5	3.5	14.0
Charlotte, N. C.	19.0	22.0	4.0	14.0
Hickory	19.0	....	4.0	14.0
Mt. Airy	19.0	....	4.0	14.0
Salisbury	19.0	....	4.0	14.0
Charleston, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	23.0	5.0	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Atlanta, Ga.	21.0	24.0	3.5	13.0
Augusta	22.0	25.0	3.5	14.5
Macon	22.0	25.0	3.5	13.5
Savannah	17.0	20.0	3.5	13.0
Birm'gham, Ala.	19.0	22.0	2.0	14.5
Mobile	18.0	21.0	2.0	11.0
*Montgomery	20.0	23.0	3.0	15.5
Clarksdale, Miss.	19.0	22.0	3.0	12.0
Jackson	19.0	22.0	3.0	11.0
Natchez	18.5	21.5	3.0	11.5
Vicksburg	18.5	21.5	3.0	11.5
Jacksonville, Fla.	20.0	23.0	4.0	13.0
Miami	22.0	25.0	4.0	14.5
Pensacola	20.0	23.0	4.0	13.5
Tampa	20.0	23.0	4.0	13.0
Lexington, Ky.	18.0	21.0	3.0	14.0
Covington	19.0	22.0	3.0	14.0
Louisville	20.0	23.0	3.0	12.0

*In addition to the State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
*Pittsburgh, Pa.	17.0	22.0	...	13.0
*Philadelphia	17.0	22.0	...	13.0
*Scranton	17.0	22.0	...	13.0
*Allentown	17.0	22.0	...	13.0
Altoona	17.0	22.0	...	13.0
*Erie	17.0	22.0	...	13.0
Dover, Del.	19.0	22.0	2.0	13.0
Wilmington	19.0	22.0	2.0	13.0
Springf'ld, Mass.	17.0	19.0	...	14.5
Worcester	17.0	19.0	...	14.5
Boston	17.0	20.0	...	14.0
Providence, R.I.	18.0	21.0	1.0	14.0
Hartford, Conn.	19.0	21.0	2.0	13.5
New Haven	19.0	22.0	2.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Dallas, Tex.	17.0	19.0	1.0	11.0
Fort Worth	14.0	16.0	1.0	10.0
Houston	17.0	19.0	1.0	12.0
San Antonio	16.0	18.0	1.0	10.0
El Paso	18.0	19.0	1.0	13.0
Texarkana	16.0	20.0	1.0	12.5
Muskogee, Okla.	18.0	21.0	3.0	11.0
Oklahoma City	18.0	21.0	3.0	12.0
Tulsa	19.0	22.0	3.0	12.0
Little Rock	18.5	21.5	3.0	11.5
Ft. Smith, Ark.	18.0	21.0	4.0	11.0

*The following is the schedule of discounts on gasoline adopted by the Magnolia Petroleum Co. in Texas sales and the discounts are graded according to gallonage: Over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1½ cents; over 10,000 gallons, 2 cents; over 9,000 gallons a year, ½ cent; over 24,000 gallons a year, ¾ cent; over 36,000 gallons a year, 1 cent; over 72,000 gallons a year, 1½ cents; over 120,000 gallons a year, 2 cents.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 600 gallons a month, 2 cents; over 2,400 gallons a year, 1 cent; over 7,200 gallons a year, 2 cents.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Albany, N. Y.	17.0	....	...	15.0
*New York	17.0	....	...	15.0
Buffalo	15.0	....	...	15.0
Rochester	15.0	....	...	15.0
Syracuse	16.0	....	...	15.0
Boston, Mass.	17.0	....	...	....
Providence, R. I.	18.0	....	1.0	....
Augusta, Me.	20.0	....	3.0	15.0
Manchester, N. H.	19.0	....	2.0	15.0
Burlington, Vt.	21.0	....	2.0	15.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
All Ohio points.	18.0	20.0	2.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Casper, Wyo.	19.5	21.5	2.5	13.0
Cheyenne	19.5	21.5	2.5	14.5
Albuquerque, N. Mex.	23.5	26.5	3.0	16.5
Salt Lake, Utah	22.0	24.0	3.5	18.0
Denver, Colo.	18.0	20.0	3.0	14.5
Pueblo	18.0	20.0	3.0	14.5
Butte, Mont.	21.0	21.0	3.0	16.0
Helena	23.0	25.0	3.0	17.0
Boise, Idaho	23.0	25.0	3.0	20.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
*New Orleans	17.0	20.0	3.0	11.5
Alexandria	16.5	19.5	2.0	12.5
Baton Rouge	15.5	18.5	2.0	11.0
LaFayette	16.5	19.5	2.0	12.0
Lake Charles	17.0	20.0	2.0	12.5
Shreveport, La.	15.5	18.5	3.0	11.5
Memphis, Tenn.	16.5	19.5	3.0	13.5
Chattanooga	17.0	20.0	3.0	14.0
Knoxville	18.0	21.0	3.0	14.5
Nashville	17.0	20.0	3.0	14.0
Bristol	18.5	21.5	3.0	14.0
Little Rock, Ark.	18.5	21.5	4.0	11.5

*Tax of 3 cents includes city tax of 1 cent.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
San Francisco	16.0	20.0	2.0	15.5
Los Angeles	12.5	16.5	2.0	15.5
Fresno	16.5	20.5	2.0	17.5
Reno, Nev.	21.5	25.5	4.0	19.0
Portland, Ore.	17.0	21.0	3.0	16.5
Seattle, Wash.	16.0	20.0	2.0	16.5
Spokane	20.0	24.0	2.0	20.5
Tacoma	16.0	20.0	2.0	16.5
Phoenix, Ariz.	23.0	26.0	3.0	21.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Omaha	18.25	19.25	2.0	11.5
Crawford	19.0	....	2.0	12.25
McCook	19.75	21.75	2.0	13.0
Norfolk	18.75	20.75	2.0	12.0
North Platte	19.75	21.75	2.0	12.75
Scottsbluff	19.25	21.25	2.0	12.25

CRUDE PRICE CHANGES

December 10.—Ohio Oil Co. reduced Sunburst, Mont., crude 20 cents.

December 11.—Corning crude was advanced 15 cents.

December 12.—Joseph Seeps Purchasing Agency advanced all Pennsylvania Grade crude 25 cents.

TANK WAGON PRICE CHANGES

December 8.—Standard Oil Co. of New York advanced kerosene a half cent generally throughout its territory.

December 9.—Standard Oil Co. of Louisiana advanced kerosene 1 cent throughout its territory.

December 12.—Magnolia Petroleum Co. advanced tank wagon and service station prices of gasoline at Tulsa 1 cent.

December 14.—Standard Oil Co. of Nebraska advanced tank wagon and service station prices of gasoline at Omaha 2 cents.

CALIFORNIA MARKET EXPECTING REDUCTION

LOS ANGELES, Cal., Dec. 14.—The demand for gasoline throughout the Pacific Coast marketing area is holding up fairly well for the season. In southern California the domestic consumption is good due principally to very favorable weather. In the remaining territory, the volume consumed is not so satisfactory, inclement weather being mainly responsible. In spite of this difference in demand, the price of gasoline in the Los Angeles territory remains 3½ cents under the price outside of this area. Some marketers expect a cut in gasoline outside of Los Angeles, pointing out not only that the demand is lessening, but also that despite the fact that several of the smaller refineries have shut down, production has not fallen off noticeable and as a result stocks of gasoline are growing. Another reason advanced is that competition is becoming keener every day in and around the San Francisco Bay district for gasoline sales. Julian Petroleum Corp., whose operations hitherto have been confined to the southern part of the State, is the latest company to establish a retail distributing system to serve the San Francisco market.

On the other hand, a price cut in gasoline outside of Los Angeles was looked for by many two months ago when prices in the Eastern and Mid-Continent markets were very low. No cut came, however, and now that prices east of the Rockies are stiffening, some marketers believe there will be no other cut in gasoline on the Pacific Coast.

Estimates from reliable sources point to an income for the State of California from the 2-cent gasoline tax of approximately $16,000,000 for 1925. This will show an increase of practically 33 1/3 per cent over the tax collected on gasoline sales in 1924. In other words, the domestic consumption of gasoline in the State of California increased by at least 33 1/3 per cent during 1925. Estimates also show that California will collect approximately $6,000,000 more from this source than any other State.

The market in general is marking time. In fact, aside from the very strong position assumed by natural gasoline, there has been no material change during the past week.

J. S. MECHLING DIES

CASPER, Wyo., Dec. 13.—J. S. Mechling, former district manager of the Oil Well Supply Co., died here last night. Mr. Mechling was born in Butler County, Pennsylvania, and came to Wyoming as district manager of the Oil Well Supply Co. 15 years ago.

CALIFORNIA PRICES

Gravity	Long Beach	Richfield Huntington Beach Brea-Olinda	Rosecrans	Torrance Inglewood	Whittier La Habra Montebello	Coyote	Santa Fe	Kern River Newhall McKittrick	Midway-Sunset Elk Hills	Lost Hills Belridge	Coalinga	Wheeler Ridge
14°	$ .85	$ .85	....	$ .85	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75
15°	.87	.87	....	.87	.85	.85	....	.75	.75	.75	.75	.75
16°	.90	.90	....	.90	.85	.85	....	.75	.75	.75	.75	.75
17°	.94	.94	....	.94	.85	.85	....	.75	.75	.75	.75	.75
18°	.98	.98	....	.98	.85	.85	....	.75	.75	.75	.75	.75
19°	1.02	1.02	....	1.02	.85	.85	....	.75	.75	.75	.75	.75
20°	1.06	1.06	....	1.06	.87	.88	....	....	.79	.79	.79	.78
21°	1.10	1.10	....	1.10	.89	.94	....	....	.84	.84	.84	.81
22°	1.14	1.14	....	1.14	.91	1.00	....	....	.92	.92	.89	.84
23°	1.18	1.18	....	1.18	.94	1.06	....	....	1.00	1.00	.94	.87
24°	1.22	1.22	....	1.22	.97	1.12	.97	....	1.08	1.08	.99	.90
25°	1.26	1.26	....	1.26	1.00	1.18	1.05	....	1.16	1.16	1.04	.93
26°	1.30	1.30	$1.30	1.30	1.03	1.24	1.13	....	1.24	1.24	1.09	.96
27°	1.34	1.34	1.34	1.34	1.06	1.30	1.21	....	1.32	1.32	1.14	.99
28°	1.38	1.38	1.38	1.38	1.09	1.36	1.28	....	1.40	1.40	1.19	....
29°	1.42	1.42	1.42	....	1.12	1.42	1.34	....	1.48	1.48	1.24	....
30°	1.46	1.46	1.46	....	1.15	1.48	1.40	....	1.56	1.56	1.29	....
31°	1.52	....	1.52	....	....	....	1.46	....	1.64	1.64	1.34	....
32°	....	....	1.58	....	....	....	1.52	....	1.72	1.72	1.39	....
33°	....	....	1.64	....	....	....	1.60	....	1.80	1.80	1.44	....
34°	....	....	1.70	....	....	....	1.68	....	....	1.88	1.49	....
35°	....	....	1.76	....	....	....	1.76	....	....	....	1.54	....
36°	....	....	1.84	....	....	....	1.84	....	....	....	....	....
37°	....	....	1.92	....	....	....	1.92	....	....	....	....	....
38°	....	....	2.00	....	....	....	2.00	....	....	....	....	....
39°	....	....	2.08	....	....	....	....	....	....	....	....	....
40°	....	....	2.16	....	....	....	....	....	....	....	....	....
41°	....	....	2.24	....	....	....	....	....	....	....	....	....
42°	....	....	2.30	....	....	....	....	....	....	....	....	....

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SINCLAIR OILS

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Transportation and Price of Gasoline

Rates From Distant Points With Large Surpluses Determine Prices. Important Position of Oklahoma (Group 3) and California Shown

By C. O. Willson

"What is meant by Oklahoma (Group 3) in your weekly quotations of gasoline and other refined products?" and "why do refiners in other refining areas quote their customers on a basis of Group 3?"

These inquiries are representative of several which have been received by The Oil and Gas Journal at various times, concerned with the prominent position given the tank car prices of refineries located in Oklahoma in the weekly graph shown on page 20 of this issue together with the detailed discussion of market conditions in that area.

Although these questions may be considered elementary by those actually engaged in the marketing of refined products, another type of inquiry heard among the marketers themselves indicates that there are a few at least among the refining and marketing fraternity who do not understand the "why" of the prominent position of the Oklahoma refined market. Often in this connection those connected with the manufacture and distribution of gasoline are heard to express the wish that the Oklahoma market could be eliminated from consideration. The thought back of these expressions is the belief the Oklahoma refiners as a group are the "price setter" of the entire tank car market, especially for gasoline and kerosene and that prices there often move up or down without justification.

The writer believes that a consideration of the geographical division of crude production, refining and gasoline consumption coupled with transportation costs, will clearly show the fundamental situation within the oil industry which is responsible for Group 3, which will continue to be the most important open tank car market until these basic conditions are changed.

Came From Railroads

The term "Group 3" came to the marketing fraternity from the railroads. It is a rate term applying to a group of refineries all of which have the same rate on refined products to certain points of destination which also are grouped. In the Mid-Continent rate decision of 1916 this Group 3 was confined to a few refinery centers in northeast Oklahoma, of which Tulsa was the most important. Since that time the group has been gradually enlarged by the carriers with the approval of the Interstate Commerce Commission until at the present time it includes all the operating refineries in Oklahoma. The Kansas refiners are known as Group 2 and the Kansas City, Mo., group as Group 1. There are also other groups.

The destinations to which the Group 3 refineries have the same rates have been changed slightly from time to time, but at the present time they include Illinois, Iowa, Kansas, Minnesota, Missouri, Northern Peninsula of Michigan, Nebraska, North and South Dakotas and eastern Colorado. This is now known in traffic circles as the Western Trunk Line territory. All refiners in Group 3 or Oklahoma at the present time can ship refined products to this destination group on an equal rate basis. This, of course, means that with keen competition they will all ask practically the same price for the same grade product. This explains why one quotation is given for the same product of all the 47 refineries operating in the State.

The Western Trunk Line territory is practically the only destination group to which the Oklahoma refiners are on exactly the same basis. However, the Western Trunk Line consumers fail to absorb all the gasoline available from Oklahoma plants and freight rates to other consuming points from Oklahoma are equally as important. For reasons which will be explained later, Oklahoma refiners in obtaining a domestic outlet for their plant output probably cover more consuming territory by tank car transportation than any other refining area in the United States. The foregoing briefly explains "what" is meant by the Oklahoma or "Group 3" market.

In passing to the "why" of the Oklahoma market it is necessary to recall the geographical division of crude production and gasoline output of refineries in the United States. At the present time the divisions are as follows:

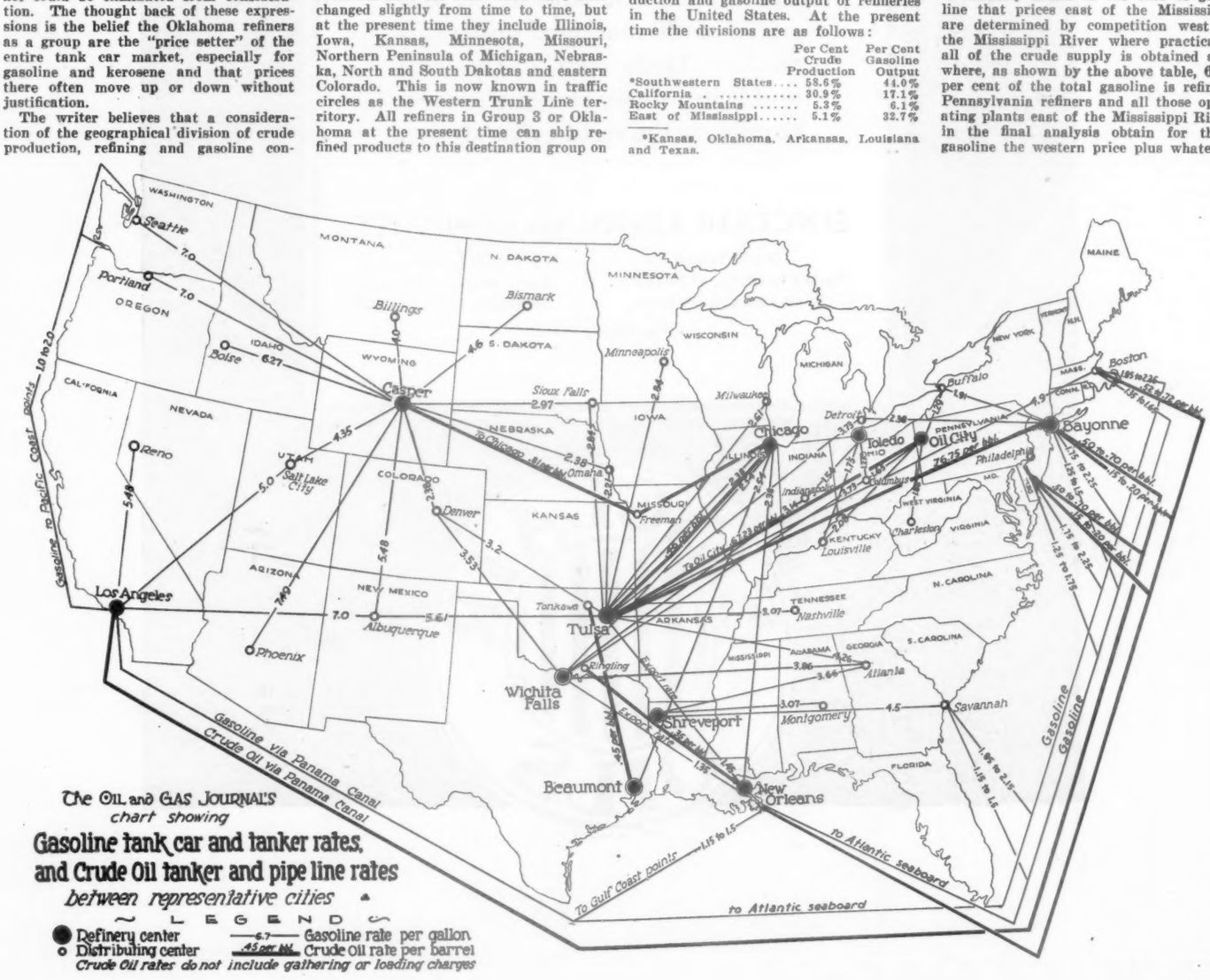
	Per Cent Crude Production	Per Cent Gasoline Output
*Southwestern States	58.6%	44.0%
California	30.9%	17.1%
Rocky Mountains	5.3%	6.1%
East of Mississippi	5.1%	32.7%

*Kansas, Oklahoma, Arkansas, Louisiana and Texas.

The importance of the table for the purpose of this discussion lies in the fact that the bulk of the crude production and the gasoline output is found in relatively small areas west of the Mississippi River. This fact should be considered with data as to gasoline demand which shows that approximately 72 per cent of the domestic gasoline consumption is east of the Mississippi River and the remaining 28 per cent west of the river.

This means that east of the river, the crude production when compared to the gasoline demand is of practically no importance. Gasoline output is greater, but it is still less than half the demand of consumers for that area.

This should answer the query of the jobber who wanted to know "why Pennsylvania refiners charged 2 cents a gallon more for the same grade of gasoline than did Mid-Continent refiners." It is axiomatic to state that refiners in all parts of the United States obtain for their gasoline that price allowed by their competition. This practice in all lines of industry means in the case of gasoline that prices east of the Mississippi are determined by competition west of the Mississippi River where practically all of the crude supply is obtained and where, as shown by the above table, 67.3 per cent of the total gasoline is refined. Pennsylvania refiners and all those operating plants east of the Mississippi River in the final analysis obtain for their gasoline the western price plus whatever



advantage their location entitles them to in the way of transportation costs.

Representative Rates

Just what rate advantage the different refining centers in the eastern half of the United States have, of course, varies. The data shown in accompanying map giving representative rates on gasoline and crude oils from several refining centers and oil fields were prepared with the idea of showing the varying rate costs. In regard to crude oil it is apparent that to the refining centers located on the Atlantic Seaboard, the water rates or combination water and pipe line rates are the lowest. The refiners located some distance from the coast are practically dependent on pipe line transportation. Water rates vary considerably, depending on the available supply of tankers and for that reason a high and low spread is given in all water rates. At the present time tanker rates are relatively low and the low figures given in the map are closer to actual charges than the high figures. It should be remembered in this connection that the bulk of the water movement, whether crude or gasoline, is in the hands of large oil companies who operate their own tankers and transport their own products. Their cost figures are not considered in the accompanying map.

Tank car rates are fixed by the railroads subject to the supervision of the Interstate Commerce Commission. The most important single factor in determining rates on gasoline is mileage, but a study of rates will show that other situations are also considered. In regard to mileage it is customary to group points of shipment or origin and also the destinations. The Oklahoma points of origin and the Western Trunk Line destination groups are examples. This means that refiners may have the same rates to certain points of destination although the mileage varies several hundred miles. Some cognizance is also taken of the fact that water rates per gallon are lower and for that reason tank car rates to the coastal areas for export or coastwise movement are lower than for the same mileage in domestic movement. In addition to this there are what are termed "competitive" rates established more or less arbitrarily for reasons which are difficult for anyone but a traffic man to understand and which are the basis of constant dispute in traffic circles.

Competitive Rates

An example of this situation lies in the fact that the rate—2.38 cents per gallon on gasoline—to Chicago is the same from such scattered points as New Orleans, Shreveport, Tulsa, El Dorado, Kans., and El Dorado, Ark. These rates according to traffic men, take into consideration the amount of material to be moved, the need of a shipping point for a wider territory to market its output, the rates to other areas and also the situation existing in the consuming centers.

With this rate situation in mind it is easier to understand how difficult it is to determine just what price will prevail at any refining center. Detroit as a point of distribution will serve as an example. It is known that gasoline from every important refining center in the United States has been shipped to Detroit during the past year. As shown on the map the rate from Tulsa, which is representative of Oklahoma (Group 3), is 3.73 cents per gallon. The rate from Toledo is a fraction of 1 cent; from Bayonne, N. J., 2.38 cents. California gasoline when the price on the west coast slumped this past summer, was shipped to Bayonne by water and then moved to Detroit by rail, the shipper absorbing the difference in freight rate advantage from Group 3 and other points. Pennsylvania, Louisiana and Texas gasoline has also been sold to Detroit jobbers due to the strategic position of that point in regard to transportation. Many other points east of the Mississippi River will show the same situation when all their possible rate factors are considered.

Surplus Sets Price

When this situation is carried to its final analysis it will be apparent that the delivery price of any consuming center will depend on the refinery tank car price in the area with the greatest surplus gasoline output and which has to be transported over the greatest distance. In other words, find the area with the lowest price f. o. b. refinery and you have the basis upon which all prices are determined.

There are, of course, many points where the gasoline is obtained from only one source. But without exception there is at least one other refining area waiting to enter that consuming market, should prices be advanced out of line with competitive costs. This second refining area is in competition with other areas so that finally the price is checked back to the refining center with the lowest price.

For the past few years the bulk of the surplus gasoline has been in the five crude producing and refining states of the southwest. California for the past three years has also been a factor due to the surplus crude and gasoline produced in that section above the immediate needs of the west coast areas, its normal marketing outlet.

In the southwest during September 410,126,000 gallons of gasoline were produced. The same states only consumed 96,991,009 gallons of gasoline within their borders, which meant that three out of every four gallons produced had to be marketed at some distant consuming point. A glance at the map will show that in getting rid of this surplus gasoline the Oklahoma or Group 3 refiners, which have the greatest surplus, are less favorably situated than any of the five states. It is practically surrounded by other states which also have surpluses to sell. This naturally forces the Oklahoma refiners to lower their prices so as to absorb whatever advantage the refiners of adjoining states have in the sale of the surplus gasoline. The North Texas group of refiners occupy practically the same situation in regard to getting rid of their gasoline. They have lower export rates than Oklahoma and lower domestic rates to certain points. However, Oklahoma has a 2½ cents differential under North Texas to Western Trunk Line points so that checking the advantage against the disadvantages the two refining groups are near an equality. This is reflected in the fact that based on the weekly quotations of The Oil and Gas Journal, the average gasoline prices for the year are practically the same.

Caused by Conditions

This briefly, then, explains the "why" of Group 3. It is the center of the area with the greatest gasoline surplus and the one to which all other refining areas must look when looking for a price on which to base their own quotations. It is not a "price setter," but simply reflects fundamental conditions in regard to supply and demand to which all other areas contribute.

California is the only area which has given serious competition recently to Group 3. With the cheaper water rates refiners in that section have been able to dispose of its surplus gasoline in the eastern half of United States in direct competition with Group 3. However, these surplus offerings from the west coast have been spasmodic and small compared to the regular surpluses from the southwest. The Rocky Mountain refiners—principally the Casper, Wyo., group—also have a surplus which it markets in competition with the California refiners on the west and Mid-Continent refiners to the east. Prices are higher in the Rocky Mountain area primarily because of the long distances over which the gasoline has to be transported regardless of the source of supply.

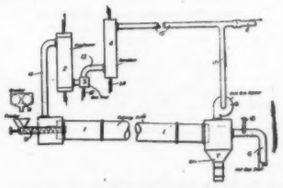
Those not acquainted with the situation might conclude that those refiners located long distant from the large refining centers are guilty of profiteering in securing more for their gasoline output. The same rule which applies to gasoline is applicable to crude oil. The refiners located long distant from a crude supply pays more for his raw material and this difference usually offsets any advantage he may have in regard to the sale of his plant's output.

RECENT PATENTS

(Continued from Page 131)

Baume gravity materially less than 66 degrees, separating the oil from the substances immiscible therewith, treating the separated oil with an alkali, and distilling off and collecting the oil.

1,562,723. Process of distillation. Daniel Pyzel, Piedmont, Calif., assignor to Simplex Refining Co., San Francisco, Calif., a corporation of California. Filed Nov. 3, 1919. Serial No. 335,537. Renewed May 11, 1925. Two claims. (Cl. 196—79.)



1. A process of refining liquid bituminous material which comprises: mixing said material with solid matter to form a bituminous mixture; rolling said bituminous mixture in the form of coherent balls through a chamber; and passing hot non-oxidizing gases through said chamber in contact with said balls.

1,563,203. Process of producing viscous liquids and product thereof. Leon Lilienfeld, Vienna, Austria. Filed January 10, 1921. Serial No. 436,382. Four claims. (Cl. 196—54.) (Granted under the provisions of the act of March 3, 1921, 41 Stat. L., 1313.)

1. Process of making high boiling viscous oily liquids which comprises bringing acetylene into contact with coal tar hydrocarbons, boiling at above 140 degrees Centigrade, in the presence of aluminium chloride.

4. As new products, the herein described oils which may be produced by reacting upon coal tar hydrocarbons boiling at above 140 degrees Centigrade, with acetylene in the presence of aluminum halides, such products being colorless to yellow oils having a marked blue fluorescence and a high viscosity and being unsaponifiable and having lubricating properties and which distill over, from the oily material remaining after removing the aluminum halides, at between 85 and 260 degrees Centigrade, under a pressure of 20 mm. of mercury, such oils being composed essentially of aromatic hydrocarbons, practically free from aliphatic hydrocarbons, boiling between about 180 degrees Centigrade and about 300 degrees Centigrade, at a pressure of about 35 mm. of mercury, having a specific gravity a little greater than unity, and being freely miscible with hydrocarbon oils of the aliphatic and aromatic series, nitrobenzene, chlorbenzene, chloroform, carbon bisulphide and carbon tera-chloride.

TURKS LOSE ON MOSUL, MEDIATION CONTINUES

Turkey has lost the first round in the battle for Mosul. The Council of the League of Nations, despite a vigorous Turkish protest and even a threat to leave Geneva immediately, unanimously voted to accept the consultative opinion of the World Court as a guide to its settlement of the problem whether Mosul will go to Great Britain as part of the Irak mandate, or be handed over to Turkey.

The World Court has declared that the council has a clear right definitely to determine the Mosul frontier. Turkey voted in the negative when the ballot was taken but President Scialoia announced that neither the vote of Turkey nor that of England could be counted.

The next step of the council will be a direct effort to mediate between the parties; but if this fails, the general opinion is that the council would proceed to impose its decision on the disputants.

Munir Bey, Turkish minister to Switzerland, who heads the Turkish mission, warned the council that his country would never turn over the destinies of Mosul to the uncertainties of arbitration and declared that Turkish preliminary assent to any decision was indispensable, because the council could only mediate.

OKLAHOMA MOTOR FUEL PRICES DECLINE

(Continued from Page 20)

under that figure. Naphtha quotations were maintained at 9 to 9¼ cents.

Natural Gasolines and Blends

Natural gasolines, excepting the A grades, apparently were exceptions to the softening markets, Grades C, B and Double B maintaining steady prices with comparative firmness. Grades A and Double AA, however, slipped materially in strength and some sellers were freely offering these products at 11 cents and some as low as 10¾ cents. Natural gasoline contracts for 1926 still continue in line for much discussion but few have been made, the only one of importance so far being the contract made by the New Orleans Refining Co. with the Phillips Petroleum Co., which was reported a couple of weeks ago.

Blended motor natural gasolines, however, were unusually dull during the week, although market prices were not materially changed. This was in direct contrast to the situation of the previous few weeks when the manufacturers were pushed to keep up with the demand. Sales of 60-62 450 blend still were reported at 9¾ to 10 cents. The 64-66 437 blend, on the other hand, was slightly weaker at 10¼ to 10½ cents, while the 68-70 blend was quoted at 10½, although no sales were reported.

Kerosene and Distillates

Recent export demand and an export purchase of 1,500,000 gallons the past week have been chiefly responsible for maintaining the strength of kerosene. The purchase of 1,500,000 gallons was made from a large Oklahoma refiner for shipment over the month. This was of the 41-43 grade and was made at a reported price of 5 cents. The market on this grade generally was 5 to 5¼ cents while 42-44 water white moved at 4½ cents.

Distillates were quiet but the 38-40 grade was moved at 4 to 4⅛ cents and the 36-38 at 3⅞ to 4 cents.

Fuel Oil and Gas Oil

A sale of 50 cars of 24-26 fuel oil Monday by an Oklahoma refiner helped to firm the fuel oil situation after a softness had developed during the week. This sale was reported made at $1.27½ with shipment over a period of 10 days. However, other 24-26 fuel could be obtained fairly free at $1.25 while a week ago it was difficult to obtain under $1.27½.

Other grades were not changed materially in price, lower gravities still being moved at $1.22½ to $1.25; 22-26 at $1.25 and 28-30 at $1.35 to $1.40.

Gas oil was slightly weaker with some straw colored product being offered as low at 3½ cents. This, however, was not general, the ruling market still being maintained at 3⅝ to 3¾ cents. Dark gas oil was quoted freely at 3½ to 3⅝ cents as last week.

Lubricants and Wax

Lubricating oil manufacturers continued to report good movements of lubricants with market prices unchanged. Favorable weather the past month until this week has caused a steady strengthening of these products with a possible tendency toward higher prices. Bright stocks and steam cylinder stocks were especially in demand. Spot wax markets were maintained at 5½ cents.

TO BUILD OIL SHALE ROCK PLANT

The Bethlehem Shipbuilding Corp. has closed a contract with N-T-U Co. calling for the construction at a cost of $400,000 of a plant near Santa Maria, Cal., capable of extracting 1,000 bbls. of oil per day from oil shale rock. The erection of this plant represents a development in the process of obtaining oil from shale and is the first large shale extracting plant to be built in this country.

Mexican Shipments In November Show 420,292 Barrels Loss

By George Blardone

TAMPICO, Mex., Dec. 9.—Shipments of petroleum from Mexican ports of primary clearance during the month of November totaled 6,173,457 bbls., a decrease from the October movement of 420,292 bbls. Furthermore, November's movement is a decrease from the movement in the same month of 1924 of 4,981,550 bbls.

Suffice it that the subjoined figures, by companies, reflect what every company can possibly withdraw from existent wells, some very few minor exceptions noted, except the subsidiaries of Pan American Eastern, which has considerable reserves; and, in another instance, National Lines of Railways, which under its flush production crusade also has more oil in the Chapacao right of way of the Ebano sector of the northern fields than it can handle at present.

As before noted, some oil credited to the West Indies (Cuba and West Indies) is undoubtedly eventually being cleared for United Kingdom and the Continent (Mexican Eagle Oil Co., Ltd., and Cia Mexicana-Holandesa La Corona).

The detailed shipments, by companies, follow:

FROM TAMPICO

By Transcontinental Petroleum Co.

Nov.	Rig	Vessel. Destination—	Bbls.
1	Ss.	Pioneer, Key West	*46,882
2	Ss.	Imlay, New York	64,255
2	Ss.	Mevania, New York	64,737
3	Ss.	Malacca, New York	71,519
3	Ss.	Dora C., Baytown	51,307
4	Ss.	Ardmore, Baltimore	76,491
4	Ss.	Mary Luckenbach, Port Tampa	*46,992
4	Ss	Augoton, Baltimore	68,305
5	Ss.	Princeton, Baton Rouge	49,606
5	Ss.	Malabar, New York	75,353
6	Ss.	Clement Smith, New York	71,508
6	Ss.	Albertolite, Montreal	50,791
7	Ss.	Halsey, New York	66,602
10	Ss.	L. J. Drake, Charleston	60,492
10	Ss	Dora C., Key West	45,952
12	Ss.	Pioneer, Mariel, Cuba	47,960
14	Ss.	Gedania, Baltimore	89,333
14	Ss.	Mary Luckenbach, Cuba	49,890
17	Ss.	Hoxbar, New York	68,840
18	Ss.	D'Ilwyn, Baltimore	66,217
18	Ss.	Cape Cod, Charleston	66,931
19	Ss.	Durango, New York	68,359
21	Ss.	J. A. Bostwick, New York	82,633
22	Ss.	Princeton, Baytown	50,123
22	Ss.	Dora C., Port Tampa	*43,303
22	Ss.	Eurana, Charleston	60,919
23	Ss.	Pioneer, Key West	*47,570
26	Ss.	Glenpool, Baton Rouge	51,523
29	Ss.	Argon, Providence	62,714
29	Ss.	Mary Luckenbach, Port Tampa	*47,542
30	Ss.	W. A. Riedemann, New York	73,964
30	Ss.	W. A. Riedemann, New York	*29,537
		Bunker deliveries	80,456
		Total	2,029,111

By Huasteca Petroleum Co.
(Pan American Eastern)

Nov.	Rig	Vessel. Destination—	Bbls.
2	Ss.	Cerro Azul, Rio Janeiro	*10,151
2	Ss.	Fueloil, Miami	*14,402
2	Ss.	Mantilla, Galveston	*53,023
3	Ss.	San Rosendo, Buenos Aires	†64,847
7	Ss.	O. D. Bennett, Portland and New York	†53,099
7	Ss.	Norman Bridge, Port Tarafa, Cuba	*49,696
10	Ss.	Mantilla, Portland	*51,212
11	Ss.	H. G. Wylie, Fall River	*40,076
11	Ss.	F. H. Wickett, Santos and Rio Janeiro	*81,159
14	Ss.	P. H. Harwood, New York	*68,922
14	Ss.	Mirlo, Boston	*64,066
17	Ss.	Comet, New Orleans	13,530
17	Ss.	Comet, New Orleans	†4,930
17	Ss.	Meline, Panama	*49,879
17	Ss.	Fueloil, Miami	*14,256
17	Ss.	Crudoil, Miami	*14,311
18	Ss.	Elisha Walker, New York	*67,599
22	Ss.	Mendocino, Portland	*63,113
23	Ss.	Norman Bridge, Tampa	*41,481
23	Ss.	G. G. Henry, Galveston	*66,826
24	Ss.	S. M. Spalding, New Orleans	68,758
24	Ss.	R. W. Stewart, New York	*74,785
27	Ss.	Wm. Green, New Orleans	70,715
27	Ss.	Comet, New Orleans	13,391
27	Ss.	Comet, New Orleans	*4,955
29	Ss.	Montana, Providence	*62,720
30	Ss.	G. G. Henry, Boston	*64,670
30	Ss.	G. W. Barnes, Baltimore, Norfolk, New York	*75,104
		Bunker deliveries	92,419
		Total	1,405,095

By Mexican Sinclair Petroleum Corp.

Nov.	Rig	Vessel. Destination—	Bbls.
5	Ss.	Mirita, New Orleans	54,684
10	Ss.	Harry Farnum, Puerto Barrios, C. A. M.	29,388
10	Ss.	E. W. Sinclair, Nuevitas	42,292
15	Ss.	W. L. Connelly, Nuevitas	29,836
17	Ss.	Gene Crawley, New Orleans	36,184
17	Ss.	A. E. Watts, New Orleans	70,900
19	Ss.	Cape Henlopen, Boston	67,056
19	Ss.	W. G. Ogilvie, Port Tarafa, Cuba	8,121
23	Ss.	Harry Farnum, Matanzas	29,253
26	Ss.	E. W. Sinclair, New Orleans	42,216
26	Ss.	Mirita, Cienfuegos	54,743
		Bunker deliveries	22,363
		Total	481,036

By Mexican Eagle Oil Co., Ltd.

Nov.	Rig	Vessel. Destination—	Bbls.
1	Ss.	San Zotico, Key West	*53,365
4	Ss.	San Lamberto, Key West	*50,706
5	Ss.	Sir James Bell, Belize and Guatemala	†6,898
6	Ss.	San Silvestre, Nassau f/o	*36,765
11	Ss.	San Manuel, Nassau f/o	†36,819
19	Ss.	San Tirso, Key West f/o	*57,134
20	Ss.	San Leonardo, Nassau f/o	*47,328
26	Ss.	San Zotico, Key West f/o	*52,532
26	Ss.	San Nazario, Rio Janeiro	*8,332
28	Ss.	Ebro, Belize and Guatemala	†6,723
30	Ss.	San Lamberto, Havana	*56,619
		Coastwise deliveries	†370
		Bunker deliveries	50,465
		Total	463,960

By Mexican Gulf Oil Co.
(For Various Accounts)

Nov.	Rig	Vessel. Destination—	Bbls.
6	Ss.	Derbyline, Amsterdam	60,008
12	Ss.	Tustem, Philadelphia	55,416
17	Ss.	W. F. Burdell, Providence	65,214
17	Ss.	Virginia, Port Arthur	61,731
23	Ss.	Topila, Brunswick	48,180
24	Ss.	Agisea, Providence	69,902
25	Ss.	Alpha, Boston	59,682
		Bunker deliveries	10,879
		Total	431,012

By Cia. Mexicana-Holandesa La Corona, S. A.
(Royal Dutch Shell)

Nov.	Rig	Vessel. Destination—	Bbls.
4	Ss.	Topila, Brunswick	49,094
12	Ss.	Belridge, Bahamas f/o	57,675
12	Ss.	San Joaquin, New Orleans	62,853
23	Ss.	San Zeferino, Bahamas f/o	51,802
28	Ss.	Scott, American, Bahamas f/o	54,349
		Bunker deliveries	43,897
		Total	319,670

By East Coast Oil Co.

Nov.	Rig	Vessel. Destination—	Bbls.
5	Ss.	Tamiahua, Galveston	66,393
9	Ss.	F-Sulphur 6, Freeport	17,679
11	Ss.	Tamiahua, New Orleans	66,677
21	Ss.	Tamiahua, Galveston	66,322
21	Ss.	F-Sulphur 6, Freeport	30,188
27	Ss.	F-Sulphur 6, Freeport	24,061
		Bunker deliveries	13,847
		Total	275,167

By The Texas Co.

Nov.	Rig	Vessel. Destination—	Bbls.
10	Ss.	Louisiana, Port Neches	27,216
18	Ss.	Louisiana, Port Neches	26,879
22	Ss.	Dungannon, Bayonne and Marcus Hook	*55,198
26	Ss.	Pennsylvania, Norfolk	53,256
27	Ss.	Louisiana, Matanzas	25,024
		Bunker deliveries	18,325
		Total	205,898

By Pierce Oil Corp.

Nov.		coastwise deliveries (V. C.)	107,286
		Bunker deliveries	2,656
		Total	109,942

By Panuco Boston Oil Co.

Nov.	Rig	Vessel. Destination—	Bbls.
28	Ss.	Agwisun, Philadelphia	70,617
		Bunker deliveries	9,623
		Total	80,240

By Mexican Atlas Petroleum Corp.

Nov.	Rig	Vessel. Destination—	Bbls.
1	Ss.	Torres, New York	48,595
2	Ss.	Wm. Isom, Baltimore	22,105
		Total	70,700

By Cia. Petroleum La Espuela S. A.

Nov.	Rig	Vessel. Destination—	Bbls.
11	Ss.	F-Sulphur 1, Freeport	16,014
17	Ss.	F-Sulphur 1, Freeport	16,383
22	Ss.	F-Sulphur 1, Freeport	15,905
28	Ss.	F-Sulphur 1, Freeport	17,608
		Total	65,910

By New England Fuel Oil Co.

Nov.	Rig	Vessel. Destination—	Bbls.
7	Ss.	Argon, New York	63,021

By Interocean Oil Co.

Nov.	Rig	Vessel. Destination—	Bbls.
19	Ss.	Nelson, New York	29,993

By Mexican Oil Products Corp.

Nov.	Rig	Vessel. Destination—	Bbls.
17	Ss.	Nelson, New York	17,009
		Bunker deliveries	4,051
		Total	21,060

By Empire Gas & Fuel Co.

Nov.	Rig	Vessel. Destination—	Bbls.
1	Ss.	Agwisun, Philadelphia (top-off)	5,434

FROM TUXPAM

Nov.	Rig	Vessel. Destination—	Bbls.

By Mexican Eagle Oil Co., Ltd.

5	Ss.	San Lamberto, Key West	*5,961
27	Ss.	San Nazario, Rio J. and Santos	*95,613
		Bunker deliveries	14,634
		Total	116,208

NOVEMBER SUMMARY

From—	
Tampico	6,057,249
Tuxpam	116,208
Total November, 1925	6,173,457
Total November, 1924	11,155,007
Decrease November, 1925	4,981,550

DIVISION OF MOVEMENT

To—	
United States	4,539,321
Cuba and West Indies	669,176
South America	260,002
Mexican Coastwise	107,656
Canada	80,791
Continent	60,008
Panama	49,879
Central America	43,009
Bunkers (to balance)	363,615
Total	6,173,457

CLASSES

Crudes	3,830,967
Topped crudes	1,695,593
Distillates	283,282
Bunkers (to balance)	363,615
Total	6,173,457

*Denotes topped crude; †denotes distillates.

VENEZUELA EXPECTED TO DEVELOP QUICKLY

In addition to its oil production in Mexico, which is now attaining new high record figures, Pan American Petroleum & Transport, through its ownership of Lago Petroleum, has another source of oil supply that, the Wall Street Journal says, may in time rank with the Mexican fields. Pan American has about 3,000 square miles of oil lands in Mexico. In Venezuela, which many geologists believe will be the future course of the world's principal oil supply, the company has 5,000 square miles of oil lands in Lake Maracaibo alone. It owned the oil rights to practically the entire bed of Lake Maracaibo and in this bed, consisting of 5,000 square miles, the company is carrying on active drilling operations and, remarkable as it may seem, every oil well that it has drilled in the lake has been a producer.

Some people have the notion that oil production in Venezuela is something to be thought of away in the future. The Pan American Company is producing from its Lake Maracaibo holdings at present, and is shipping oil from these holdings at the rate of from 26,000 to 32,000 bbls. a day. Due to present production of over 40,000 bbls. daily shipments will show a corresponding gain. Lake Maracaibo lies in a vast basin. From the formation of the country surrounding the basin, geologists believe the oil pool lies at the center of the basin under the 5,000 square miles forming the bed of the lake.

Oil operations in Lake Maracaibo are economical. In drilling for oil on land solid foundations must be put in for boilers to furnish power and for the drilling machinery itself. In drilling on this shallow lake the entire mechanical equipment is mounted on huge barges. It probably costs less to drill an oil well in Lake Maracaibo than anywhere else in South America.

Through Lago Petroleum the Pan American Company is now carrying out an extensive campaign to bring its oil production in Venezula to as high a point as may be necessary. The geologists are practical oil men who know that country and believe the future oil production there will be enormous. Leading officials of the Standard Oil Co. of Indiana are now on their way south to look over the Lake Maracaibo properties.

Lago Petroleum was incorporated early in 1923 and acquired 115 concessions of 24,700 acres each and one concession of 22,000 acres on areas covered by Lake Maracaibo. Total acreage of those concessions approximate 3,000,000 acres.

Subsequently, Lago Petroleum acquired the British Equatorial Petroleum Co., which had been in Venezuela for several years. The British Equatorial had concessions covering 750,000 acres, bringing Lago's total area up to 3,750,000 acres. Part of the British Equatorial lands were maritime concessions and the rest were in various parts of Venezuela, notably the State of Monagas, where Standard Oil of New Jersey recently brought in an oil well.

Lago Petroleum has drilled on only one small area on its concessions, its activity so far having been confined to La Rosa, where the company has drilled about 30 producing wells producing better than 40,000 bbls. of oil a day along the edge of the lake.

The company is now drilling an important test well about a mile in the lake and several miles north of La Rosa. The company's geologists estimate the well would open a new area that will probably be productive over an area of 5,000 to 10,000 acres.

Venezuela is nearer the oil markets of this country and Europe than Mexico. It costs about 35 cents to bring a barrel from Venezuela to the Atlantic Seaboard.

TINSLEY BOTTOM WELL BETTER THAN 100 BBLS.

CELINA, Tenn., Dec. 15.—The J. M. Grey well, 5 miles north of production at Tinsley Bottom, near Celina, in Clay County, Tennessee, when turned loose did better than 100 bbls. the first hour from a total depth of 307 feet, seven feet below the Pencil Cave formation. So far all available storage amounting to 450 bbls. has been filled, and the well was pinched down to one-quarter capacity of a 2-inch line. The first Sunnybrook sand at 210 feet and the second Sunnybrook at 287 feet both had good oil showing.

The Grey well, located by J. H. McClurkin, was drilled by Clarke and Garretson. The Pencil Cave is 83 feet higher than the cave formation in Kyle Brothers' well, three-quarters of a mile west in the borough limits of Celina, Tenn., which corresponds with the dip of the black shale toward the northwest in that locality, and bears out the calculations of the geologists and lends color to their belief that an oil pool of considerable magnitude will be opened around Celina.

Another test is drilling in Celina on a location selected by California geologists that should reach the pay this week. The Pencil Cave formation was found much higher in this test than in the Kyle well and seems to be far up on the structure.

It is believed that the Stoll Oil Refining Co., which maintains the gathering system in Clay County, will extend its lines to the Grey farm. If this is done, several wells that have been drilled near Celina will have an outlet for their crude, and will induce new drilling.

FREIGHT RATE CHANGE HAS BEEN SUSPENDED

Mid-Continent refiners have received notification that the Interstate Commerce Commission has temporarily suspended the change in freight rates on export oil shipments through Gulf Coast ports. The proposed increases would have become effective last Friday. The suspension followed last-minute appeals by refiners protesting against such changes. The changes in some cases involved large increases through New Orleans, which is the port through which the great bulk of the export oil moves. Under the new order, existing rates to Galveston and New Orleans and other Gulf ports must be maintained until April 9, 1926. Meanwhile the commission plans to consider the proposed changes further.

FITZPATRICK SUCCEEDS SUTTON

Horace C. Fitzpatrick, late superintendent of field operations in Wyoming for the Prairie Oil & Gas Co., has been advanced to assistant superintendent of the land department to succeed W. B. Sutton, of Tulsa, who will head the Mid-Continent land department of the Vacuum Oil Co.

Mr. Fitzpatrick began his duties in Tulsa on Monday. He has been in the service of the Prairie Oil & Gas Co. since 1909 and was in the land department, with Tulsa as headquarters, in 1915 and 1916. He is well equipped by nearly 16 years of experience in various branches of the company's activities to fill all the requirements of his new position. Mr. Fitzpatrick is a graduate of Chicago University.

DISCUSSES URANIA POOL

SHREVEPORT, La., Dec. 14.—The development of the Urania Pool in La-Salle and Winn Parishes and an outline of structural features of that territory was presented to the Shreveport Geological Society at its regular monthly meeting in the Junior Chamber of Commerce Auditorium, Slattery Building, on Friday night by W. W. McDonals of the Louisiana Oil Refining Co. Another paper which was presented by F. X. Bostick of the Standard Oil Co. discussed the micropaleontologh of the formation encountered in the Shreveport district.

Use of Zeolites to Soften Water

Method of Filtration Depends on Kind of Product and Material to Be Treated. Charts Simplify Calculations

By H. W. Terry*

While "zeolites" have been known for many years, the growth of a large commercial demand has occurred mainly in the last 10 years. For the benefit of those readers who have not followed this development in water softening, it may be explained that zeolites are hydrated double silicates that have the power to take up the hardening or scale-forming bases from water, giving up their equivalents in sodium. For example, if a water containing calcium bicarbonate is filtered through a zeolite, it will contain sodium bicarbonate in place of the calcium bicarbonate, while the zeolite will hold the calcium taken from the water.

As might be expected, the zeolite will not continue indefinitely to function in this way, and when it has become so charged with hardening bases that the water passing through it is no longer completely softened, it must be relieved of these bases. This is done by passing a brine solution through the zeolite, which causes a reverse reaction to take place, the zeolite taking up sodium and giving off the hardening bases.

The machine or filter containing zeolites may operate to pass the water either upwardly through the filter medium or downwardly, according to its design. Either method is successful, as the softening is caused by contact of the water with the zeolite.

The "Consolidated Freight Classification Guide" gives three classifications for use in shipping zeolites, namely: Sand processed for water softening; clay processed for water softening; water purifying compound.

"Sand processed for water softening," is technically known, before treatment, as glauconite and familiarly as green sand, or Jersey marl. For many years Jersey marl was used to some extent as a fertilizer. During the war some money was spent upon a project for mining this sand and recovering the potash from it. This marl, however, finds its best-paying market as a filter medium for softening water.

"Clay processed for water softening" refers to a product mined and processed in South Dakota.

The classification "water purifying compound" includes filter media for water softening made by precipitation of zeolites from chemical solutions as well as zeolites made by fusing together the necessary ingredients.

The physical characteristics of these various materials, as well as their chemical behavior, determine the proper design of the filtering machine in which zeolites may be used.

Table I gives an estimate of the weight, size and exchange value of typical examples of the three classes of zeolites.

The exchange values given can be obtained when regeneration is completed in 30 minutes and one-half pound salt is used per 1,000 grains of hardness removed by regeneration.

The physical characteristics of these zeolites determine the filter rate that can be used; that is, the gallons of water that can be passed through the filter per square foot of filter area per minute. The filter rate determines the area or diameter of the filter.

A fine material hinders the flow of water downward through a filter and necessitates the use of low filter rates. On the other hand, if the flow is upward, a fine material will be carried upward with the water unless the filter rate is controlled.

Therefore, filters containing green sand operate at filter rates that do not greatly exceed the rates used in common-sand filters.

A light zeolite will pack if high rates are used and the flow is downward. If the flow is upward, a high rate will lift the material and carry it along with the water. In practice filters containing water-purifying compound operate at about the same rates as those using green sand.

Filters containing "clay processed for

(Continued on Page 142)

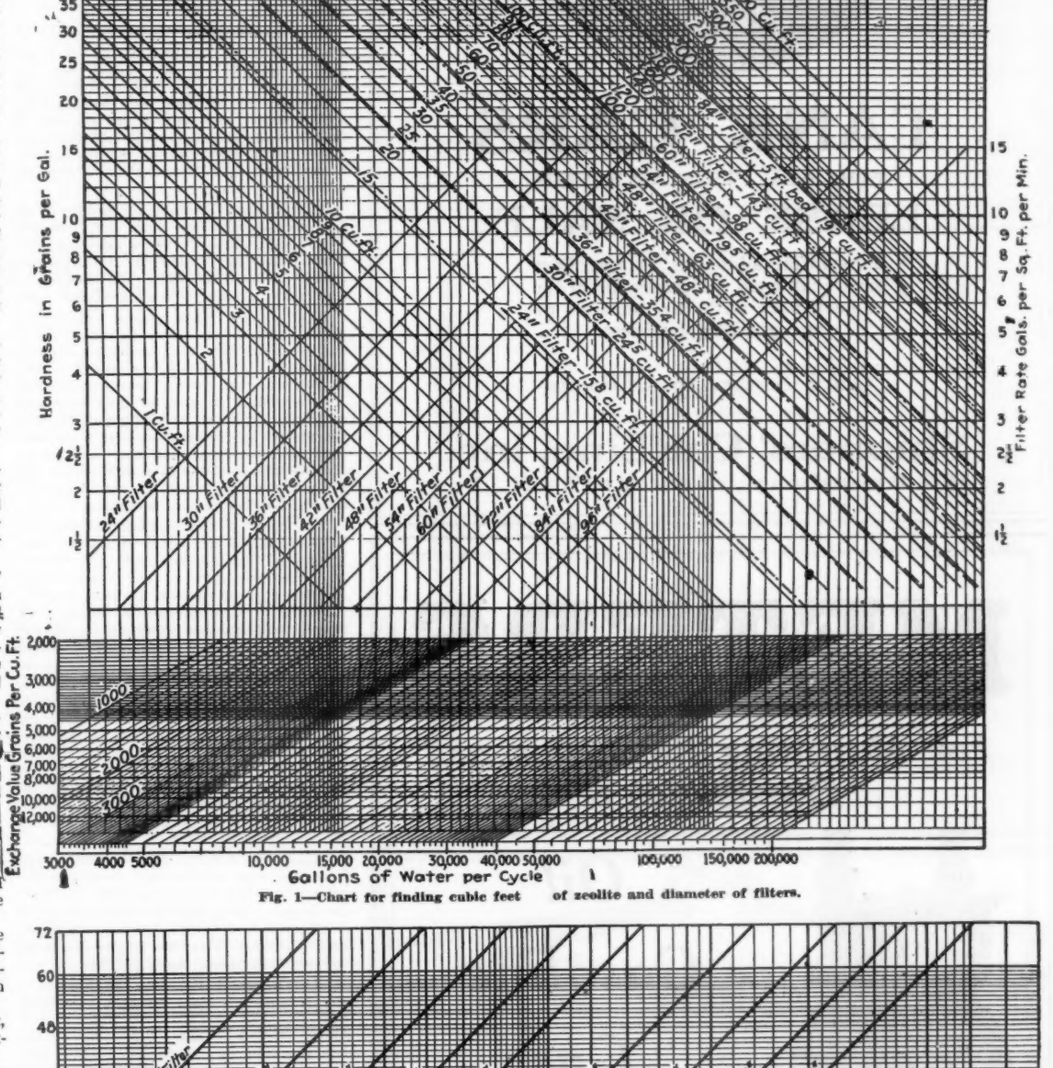


Fig. 1—Chart for finding cubic feet of zeolite and diameter of filters.

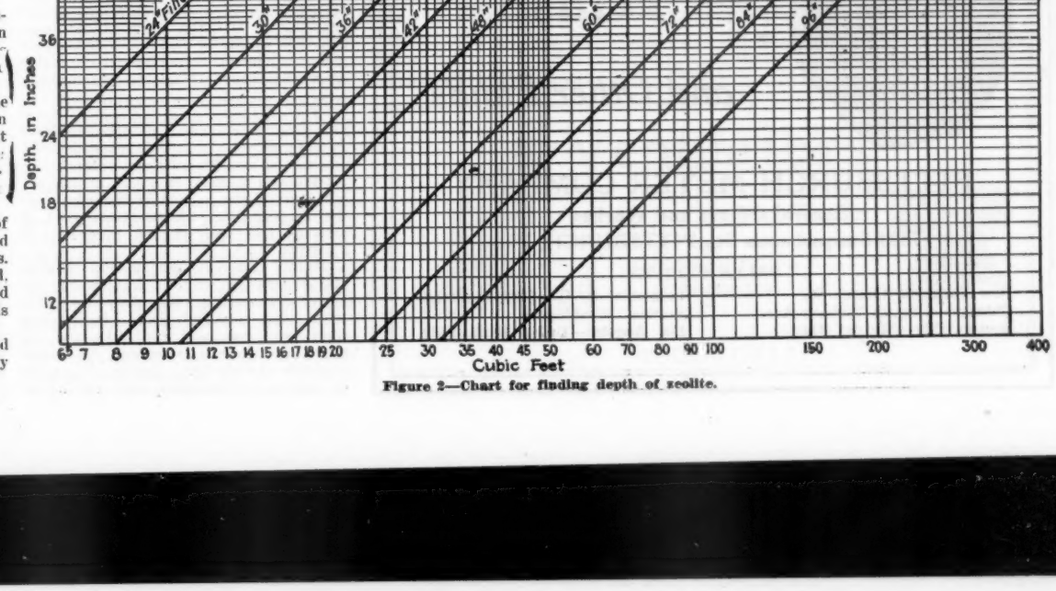
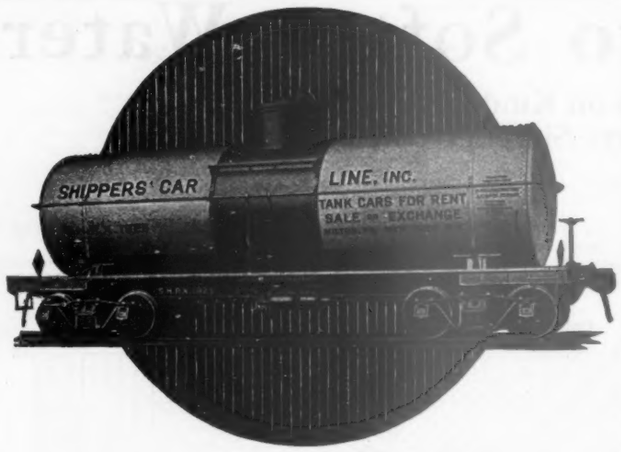


Figure 2—Chart for finding depth of zeolite.

*Reprinted from "Power."



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Donoghue Broadcasts Facts About Oil and Houston's Part in It

HOUSTON, Tex., Dec. 12.—A five-minute address was made by T. J. Donoghue, first vice president of The Texas Co., which was broadcast by radio from KPRC station The business men are staging a "Know Houston Week," in which the various industries and commercial enterprises are being featured. Mr. Donoghue spoke on oil and its importance to Houston and the territory surrounding the city.

His brief address is as follows:

"In the ever-expanding commerce and industries of Houston the oil business fills a large place. Its magnitude and importance can only be suggested in a five-minute talk.

"In the Houston section—a circle of about 50 miles' radius—are 16 oil fields and a number of salt domes not yet brought to production. There are 15 oil refineries, 12 of them on the Houston ship channel. One-half of the oil refined in all Texas passes through refineries on the Houston ship channel, the Texas City channel and the Port Arthur-Beaumont channel.

"The Houston section has produced oil in large quantity ever since the discovery at Humble, about 20 years ago—the production having totaled to date approximately 250,000,000 bbls. The daily production at present is around 60,000 bbls.

"You have heard about Houston's great railroad and port facilities. Most ample means are thus provided for the distribution of commodities of every sort. These are used by the petroleum industry, especially by way of tank cars and ships; but this industry is peculiarly distinguished by its main way of transporting its crude material. Let me say a few words about the pipe line, which has been the chief factor in the enormous development of the oil business.

"As soon as the smallest adventurer, wildcatting on the verge of an oil field, strikes oil, he will see, within a day or two, the line crew of the nearest pipe line laying pipe to take his little supply. All tributaries, large and small, are thus added together, and combine to fill the great arteries whose throbbing pumps day and night drive the main streams to distant refineries and seaboard terminals.

"The trunk pipe lines, with their feeder lines from nearly every point of production, give a surpassing promptness and completeness to the transportation service for this industry; but, of course, this has necessitated the investment of large capital in the business and increased its hazards of depreciation and loss as oil fields are depleted.

"Upwards of 8,000 miles of trunk pipe lines converge at Houston from practically all of the more than 100 oil fields in Texas, and having connections to Louisiana, Oklahoma, Kansas, Arkansas and Wyoming. This vast system is being constantly extended to new fields.

"I can barely mention the proximity to Houston of great natural gas fields and the 275 miles of 16 and 18-inch main natural gas pipe line, the heaviest and largest in the world, with branch lines to a number of gas fields, affording to Houston a practically inexhaustible supply of cheap and dependable power-producing fuel. You can imagine what this should mean in the development of manufacturing enterprises.

"The oil industry in and nearby Houston gives employment to approximately 10,000 men, with a payroll of about three-quarters of a million dollars a month.

"Time is lacking to speak of the importance of the petroleum industry; but the necessity for abundant supplies of gasoline and fuel oil and lubricants is apparent.

"While improvement should always and everywhere be our watchword, the petroleum industry may face its record with some justified pride. Considering their total cost and the risks and the heavy investments required, the staple products of petroleum, among all articles of general consumption, have the lowest

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prices. Houston can claim a large share in the achievements of this industry.

"I thank you."

Government Turns Over Wells in the Red River District

Operation by the Federal Government of the Red River Oil Field bordering on Oklahoma and Texas ceased at midnight November 30 when the Interior Department turned over the wells to the various oil and gas operators awarded leases in the recent adjustment of claims in the district.

The force employed by the Government consisted of approximately 40 employes under the supervision of the Conservation Branch of the Geological Survey. The Secretary of the Interior directed that the service of these employes be discontinued and that the wells be turned over to the companies holding the leases.

Concerns with the largest leases in the field, who will take over the producing wells, include the Burke Divide Oil Co., Inc., of Terre Haute, Ind., with 227 acres; the Melish Consolidated Placer Oil Mining Association, of Oklahoma City, Okla., with 222 acres; and the Bell Oil & Gas Co., Tulsa, Okla., with a lease of 122 acres. The Bell Oil & Gas Co. recently bid $101,000 for a lease in the field when it was offered at competitive bidding by the Interior Department.

Transfer of the operation of the Red River Field to the Interior Department was made in July, 1924, from a receivership of the United States Supreme Court. The field had been in Federal receivership as a result of a decision by the Supreme Court that the lands belonged to the public domain of the United States. Prior to this decision many persons and corporations had attempted to acquire the lands and the minerals through location under the land laws and oil and gas leases from the State of Texas and other sources.

An act of Congress passed in March, 1923, authorized the Secretary of the Interior to determine equitable claims of citizens and domestic corporations who in good faith claimed and possessed the Red River Field and who had originally made expenditures for oil development. In September, 1925, the Secretary after lengthy hearings made his findings in carrying out the terms of this act awarding leases and permits to 18 of 64 claimants in the producing area. Arrangements were subsequently made for turning over the area to the companies receiving the leases so that the cessation of Federal operation of the field might result promptly.

Royalties received by the Government from the Red River Field have amounted to approximately $695,000. In addition the Government will receive a royalty on all oil and gas produced in the future.

PIPE LINE COMPANIES ELECT NEW OFFICERS

PITTSBURGH, Pa., Dec. 12.—At meetings held this week, J. M. Tussey has been elected treasurer of the four companies comprising the Southern Group of pipe lines. V. S. Swisher has been elected secretary of the Eureka Pipe Line Co. in place of J. M. Tussey, resigned and elected secretary of the Cumberland Pipe Line Co. Mr. Swisher was already secretary of the Southern Pipe Line Co. and the Southwest Pennsylvania Pipe Lines. J. M. Tussey has been appointed assistant secretary of the four companies and V. S. Swisher has been appointed assistant treasurer of the four companies.

H. C. Dorworth has been elected vice president of the Southern Pipe Line Co., Southwest Pennsylvania Pipe Lines and the Cumberland Pipe Line Co. These changes were made to fill the vacancies caused by the death of E. R. Shepard.

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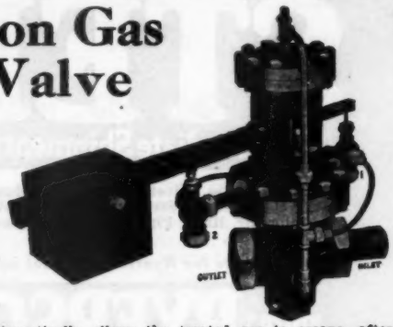

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USE OF ZEOLITES TO SOFTEN WATER

(Continued from Page 139)

water softening" operate at much higher rates than those using other zeolites because the effective size of the grain is greater than that of either of the other zeolites and the weight is sufficient to hold the bed in place.

The following table gives filter rates ordinarily used in standard practice with commercial zeolites taken as examples of the three classes:

	Filter Rate, Gal. per Sq. Ft. per Min.
Green sand:	
Downward flow	3 to 5
Upward flow	4 to 6
Water-purifying compound:	
Downward flow	3 to 5
Upward flow	4 to 6
Clay processed:	
Downward or upward flow	10 to 15

To determine the filter diameter for any given filter rate the following formula is used:

$$\frac{\text{Gal. per hour}}{60 \times \text{filter rate}} = 0.785d^2$$

where d is the diameter in feet and filter rate is in gallons per square foot per minute.

The total quantity of water to be softened during one cycle or between regenerations determines the quantity of zeolite the filter must hold. That is, the total grains of hardness to be removed by the filter and the exchange value of the zeolite together determine how much zeolite must be used; naturally, the higher the exchange value of the zeolite the smaller the quantity required. The formula for determining the quantity of zeolite required to fulfill a given condition is as follows:

$$\text{Cu. ft. of zeolite} = \frac{(\text{Hardness in gr. per gal.}) \times (\text{Gal. of water to be softened per cycle})}{\text{Exchange value of zeolite in gr. per cu. ft.}}$$

The exchange value per cubic foot is ordinarily considered to be constant for hardness between 1 and 20 grains and to be 10 per cent lower between 20 and 40 grains. The experiments of the author, however, lead him to the conclusion that the reduction in exchange value per cubic foot is greater between 1 and 10 grains than it is between 10 and 40 grains.

Table I—Approximate Characteristics of Zeolites
(Freight Classification)

	Weight per Cu.Ft., Lb. Air Dried	Weight per Cu.Ft., Lb. Wet	Exchange Value in Grains per Cu.Ft.	Size
Water purifying compound	25	50	8,000	30-mesh
Green sand	85	100	2,800	60-mesh
Clay processed	50	70	4,400	20-mesh

Charts to Facilitate Calculations

To make these points clear in a practical way, two charts have been prepared. Figure 1 is constructed to give the filter diameter and the cubic feet of zeolite to fulfill any condition within the range of the chart, being given the gallons of water to be softened per cycle, the hardness of the water and the filter rate.

Figure 2 can be used to determine the depth of a zeolite bed in a filter, being given the cubic feet of zeolite it is to contain and the diameter of the filter.

Suppose that it is required to soften 5,000 gallons per hour and 20,000 gallons between regenerations, water 5 grains hard, filter rate not to exceed 10 gallons per square foot per minute, exchange value 4,400 grains per cubic foot.

On the lowest scale of Figure 1 locate the point marked 20,000 gallons, follow the diagonal line through this point to its intersection with the horizontal line representing an exchange value of 4,400. Follow the vertical line through this point to its intersection with the horizontal line representing 5 grains (see figures on the left-hand side of the chart).

This point of intersection falls between the left sloping lines 20 and 25 representing cubic feet. By inspection the intersection is determined to represent 23½ cubic feet. The chart shows that this quantity of zeolite can be held by a 30-inch filter with a 5-foot bed. However, a 30-inch filter will necessitate a higher filter rate than 10 gallons per square feet per minute.

The filter rate is determined as follows: Locate the 5,000-gallon point on

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the topmost scale and follow the vertical line downward to its intersection with the horizontal line representing a filter rate of 10 gallons (see figures in right-hand margin of the chart).

This intersection falls between the lines (sloping down to the left) representing a 36-inch diameter filter and that representing a 42-inch diameter filter.

If a 42-inch filter is chosen, the filter rate will be 8.5 gallons. If a 36-inch filter is chosen, the filter rate will be about 12 gallons per square foot of filter area per minute.

The following is the fundamental formula for determining the depth of the zeolite bed in a filter, being given the cubic feet it is to contain and the diameter of the filter:

$$\text{Depth in feet} = \frac{\text{cu. ft. of zeolite}}{0.785d^2}$$

where d is the diameter of the filter in feet.

It is clear that 23½ cubic feet of zeolite was necessary to fulfill the conditions of the problem given, and that either a 42-inch or a 36-inch diameter filter be used. To find the depth of bed in a 42-inch filter to hold 23½ cubic feet of zeolite, proceed as follows: Locate the point representing 23½ cubic feet on the bottom scale of Figure 2. The intersection of a vertical line through this point with the diagonal line representing a 42-inch filter falls between the horizontal lines 29 and 30, representing the depth in inches.

By inspection this point is determined to be 29½ inches, which is the depth of bed required in a 42-inch filter holding 23½ cubic feet of zeolite.

Another possibility would be a 36-inch filter with a 40-inch bed (see Figure 2 for determining the depth of bed).

Table II gives a comparison of the filter diameters which in practice might be selected for the three zeolite types, any one of which would satisfactorily soften 5,000 gallons of 5-grain water per hour and 20,000 gallons between regenerations.

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Table II—Comparison of Filters for 5,000 Gallons of 5-Grain Water per Hour and 20,000 Gallons Between Regenerations

Thirty-minute regeneration and 50 lbs. salt per regeneration in each case.

Zeolite—	Filter Dia. Ins.	Bed Dpth. Ins.	Rate Gal. per Sq. Ft. per Hr.	Cu. Ft. Zeolite	Exch. Value
Green sand	54	28	5	37	2,800
Water-purifying comp.	42	16	8½	13	8,000
Clay processed	36	40	12	23½	4,400

The manufacturer designs his filters to fit the zeolite he uses and generally prepares a table of capacities. It is thus possible to select a filter to meet the conditions of any problem without special design to fit the individual case.

It is neither wise nor economical to attempt to purchase zeolite filters under a specification that compels all manufacturers to furnish the filters of the same diameter. Better results will be obtained by specifying the pressure loss allowable, the gallons of water required per hour, the hardness and the number of regenerations per day.

BEST OIL YEAR IN FIVE

NEW YORK, Dec. 12.—The oil industry is enjoying the greatest prosperity in five years, according to E. W. Marland, who returned here on the Berengaria. Demand for oil in Europe is increasing, he said.

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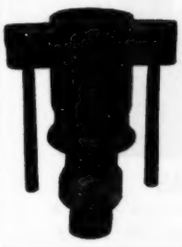

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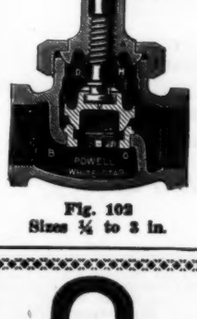
Fig. 102
Sizes ¼ to 3 in.
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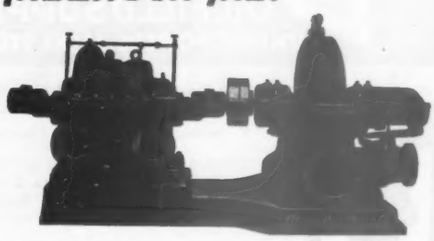

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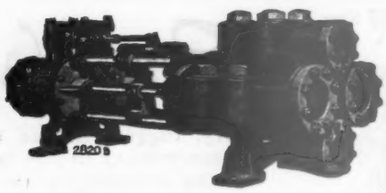

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Rumanian Deep Wells May Now Be Drilled With Rotary Tools

LONDON, Eng., Dec. 12.—The Petroleum Times' Bucharest correspondent writes:

One of the most important decisions affecting the petroleum industry of Rumania since the war is one which has just been handed down by the Supreme Mining Council to permit something over 50 wells in the Moreni Field to be drilled into the new deep formation by means of the rotary system.

The Petroleum Times last October urged that the Rumanian authorities should permit the full use of the rotary system in the country's new deep formations, pointing out the enormous difficulties which the companies were up against in their attempts to drill into these high-pressure strata with the percussion system.

Astra-Romana well No. 60 at Pleasa-Moreni is now being drilled into this deep pay under perfect control by the rotary, and with an American crew which the "Astra" has recently brought out from the United States for the special purpose of handling the high-pressure wells that are going to be encountered more and more in these fields. It is interesting to report that Mr. William McDuffie, of the Shell Co. of California, happens to be on the ground to observe the bringing in of this well No. 60.

The Romano-Americana is also drilling in with the rotary its well No. 220-A in the Cricov Valley at Moreni and another big well is expected. Romano-Americana No. 1, at Pleasa-Moreni, is still making around 1,000 metric tons of crude per day.

Among other British companies which have now received permission to drill in wells at Moreni with the rotary are: Phoenix Oil & Transport Co., the Minerva and the Dacia Romana.

Wells No. 8 of the Unirea (Phoenix group) is now within 50 meters of the deep pay at Stavropoleos, Moreni, and wells Nos. 505 and 553 of the Orion (also of the Phoenix group) are closely approaching this deep formation. All of these wells will presumably be drilled in with the rotary, and, it is hoped and expected, will have better luck than Unirea No. 28. This well, it will be recalled, broke loose about a month ago and flowed for 48 hours at a rate of more than 2,000 tons per day, but the casing got so badly damaged that it has so far been impossible to straighten it out.

May Engage Americans

It may be that ultimately the Phoenix Co. will find it necessary to follow the example already set by the Romano-Americana (Standard Oil of New Jersey) and the Astra-Romana (Royal Dutch) in bringing out from the United States drilling crews that are specially trained for handling these big gushers since all indications point to the fact that operating difficulties never before encountered in the Rumanian fields will be increasingly met with as these new deep formations at Moreni, Gura-Ocnitzei, Ochiuri and Runcu are intensively explored.

While the Phoenix Co. is to be highly complimented on the steady development of its extensive refinery and transport facilities, and on the excellent export market organization which is being built up in neighboring countries, the most important factor is undoubtedly to assure itself of adequate sources of crude supply. If the securing of highly-trained personnel will add materially towards this end (and the Astra-Romana and the Romano-Americana would surely not be following this course unless they were reasonably certain that results would justify it), any economy in this respect would be a "penny wise and pound foolish" policy.

Anything said here in regard to the Phoenix Co. and its problems applies equally, of course, to the other big producers such as the Steaua-Romana Co., Creditul Minier and the Industria Romana de Petrol. The latter company in particular is now encountering all

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kinds of difficulties in its attempts to explore the Meotique formation at Ochiuri. Early in the present year its well No. 2 in this field made some enormous flows until the inevitable "bad luck" with sand and collapsed casing came into play; and its well No. 4, which is now entering the same strata, seems likely to run up against similar difficulties.

Specially Trained Men

It is not, in brief, a matter of these high-pressure wells presenting difficulties that have not been encountered, and successfully overcome, in other oil fields throughout the world, but that, in large part, they are being handled by men who have not been specially trained to cope with such difficulties. And perhaps, what is more important still, Rumanian oil companies (save for two or three companies that are not afraid to spend money for the best and most up-to-date equipment) are too prone to try to bring in and control big wells with any old kind of tackle they happen to have lying around their storehouses. In the matter of oil fields equipment, as in most other commodities, "the best is the cheapest" is an axiom that cannot be too strongly emphasized.

SCHOOL LEASE SALES SCHEDULED BY STATE

The Commissioners of the Land Office of the State of Oklahoma will receive sealed bids until 2 o'clock p. m. on December 29, 1925, for oil and gas leases on the following school and State lands:

Comanche County—SE Section 36-3n-10w, 160 acres; SW Section 36-3n-10w, 160 acres.

Stephens County—NW Section 36-2n-9w, 160 acres; SW Section 36-2n-9w, 160 acres.

Until 2 o'clock, December 22, 1925, on:

Lincoln County—NE Section 16-15n-6e, 160 acres; NW Section 16-15n-6e, 160 acres; SW Section 16-15n-6e, 160 acres.

Until 2 o'clock, January 5, 1926, on:

Comanche County—SE Section 16-1s-10w, 160 acres; SW Section 16-1s-10w, 160 acres.

Stephens County—SW SE W half SE SE, Section 36-2n-9w, 60 acres; S half SW, Section 36-2n-9w, 80 acres.

H. F. SINCLAIR SEES LARGER WINTER SALE

NEW YORK, Dec. 12.—H. F. Sinclair, chairman of the Sinclair Consolidated Oil Co., accompanied by G. T. Stanford, general attorney for the corporation, sailed on the Aquitania for a brief business trip. Mr. Sinclair said he wanted to go abroad to review the conditions in the oil industry which seem to be improving particularly in England.

Due to the development in Florida and the increased use of automobiles through the South generally, Mr. Sinclair said the consumption of oil and gasoline would materially fill the deficit caused by the seasonal slump during the winter months in the North. So, for the first time, he explained, the oil industry will be more balanced in the United States. He expects a general improvement in the industry, but said he would wait until next year before being satisfied the industry has stabilized itself.

TO TEST NEW SAND

FORT WORTH, Tex., Dec. 12.—The Pender Production Co. is rebuilding the rig at its No. 2 Rasmussen in southwestern Palo Pinto County. The rig was recently destroyed by fire when the drill unexpectedly encountered a stray sand at 900 feet. This well is an offset to No. 1 Rasmussen, the discovery well of the pool, which is producing from around 3,600 feet from the lime. Drillers did not have an opportunity to test the new sand found at 900 feet.

A mile almost due west of the Rasmussen wells No. 2 Slemmons of Moore & Snebold is drilling at around 500 feet. These operators lost their No. 1 in setting the last string of casing in preparation for drilling in.

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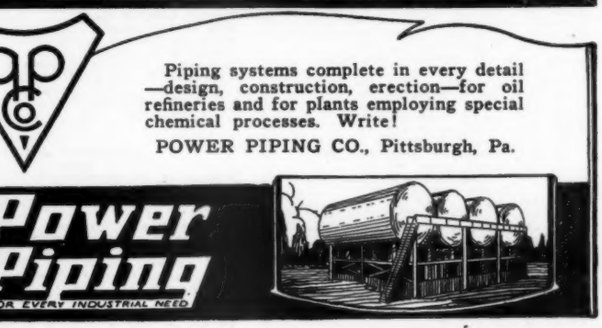

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Detailed Operations in Eastern Fields for November

EASTERN FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Allegany	19	40	0	1
Bradford	98	315	0	1
Middle Field	12	18	2	1
Venango-Clarion	35	39	5	4
Butler-Armstrong	13	18	4	3
Southwest Pennsylvania	14	31	4	6
West Virginia	106	281	27	50
Southeast Ohio	87	729	20	18
Total Nov.	384	1,471	62	84
Total Oct.	416	2,037	49	80
Difference	32	566	13	4

Field—	Rigs	Drg.	Ttl.
Allegany	9	25	34
Bradford	20	71	91
Middle Field	0	7	7
Venango-Clarion	2	15	17
Butler-Armstrong	4	15	19
Southwest Pennsylvania	6	46	52
West Virginia	56	182	236
Southeast Ohio	41	108	149
Total Nov. 30	138	469	607
Total Oct. 31	135	501	636
Difference	3	32	29

WELLS COMPLETED
ALLEGANY FIELD

Herrick, E. C. Garthwait et al. 1
Fee, McEwen et al gas
Thornton, Albert Oil 2
Fee, State Bank of Bolivar 28, 29 1
Nobles, Gigee & Tullar 2
Fee, Empire Gas & Fuel, Ltd. 3
Fee, Empire Gas & Fuel, Ltd., et al. 5
Thornton, C. O. & W. O. Taylor 2
Fee, C. C. Brennan et al. water
South Penn Oil, A. D. Reeland 1
Fee, Hazelwood Oil 1
Fee, Gilligan & McDermott 5
Fee, Gilligan & McDermott 7
Fee, L. C. Whitford et al. water
Coast et al., M. J. Crowley et al. water
Fee, Martin O'Connor 4
Fee, Cuba National Bank 14 2
Ballard, F. J. Wilson 1
Fee, Martin Bros. & Wasson 3

Wells completed 19
Production 40
Gas 1

BRADFORD FIELD

Lawton, Suhr, McSweeney & Co. 89 2
Bing, 386, Hooper & Co. 14 1
Bing. 374, Wright & Burdick 3 2
Bing. 291, Howard McCallum 88 2
Bing. 380, Wilson & Fitzgibbon 77 2
Bing. 381, Wilson & Fitzgibbon 78 2
Bing. 540, Park & Bovaird 31 1
Bing. 423, C. W. Henretta et al 26 2
Rounds & Lawrence, South Penn Oil 48 10
Fee, South Penn Oil 46 1
Redfield, South Penn Oil 101 water
Redfield, South Penn Oil 94 1
Fee, J. V. Golden 22 2
Burns et al., Bliss Oil 28 2
Fee, W. E. & W. W. Parmenter 27 2
Bing., D. T. Abrus et al 14 2
Fee, T. H. Givans 10 3
Fee, Hunqiville et al 7 2
Fee, L. G. Dana 16 3
Franchot, H. & J. G. Shannon 11 2
Franchot, L. S. Greer 7 1
Fee, Hooker et al 4 1
Fee, Howard Wile 11 2
Fee, Dana & Dana 38 2
Fee, J. A. Walters Estate 36 2
Franchot, Delo Estate 14 5
Leasure, South Penn Oil 5
Fee, W. W. Brown 1
Fee, South Penn Oil 1
Bing., Hazelwood Oil 112 3
Fee, George Kingher Co. 31 1
Fee, South Penn Oil 31 4
Fee, South Penn Oil 97 10
Bing., Associated Producers 158 gas
Associated Pro., Holding Oil Corp. 20 water
Kennedy & Clarke, Phoenix Oil 161 50
Kennedy & Clarke, Phoenix Oil 160 25
Fee, Wm. C. Kennedy Co. 103 3
South Pean Oil, Bradford Supply 43 1
Fee, Hazelwood Oil 68 1
Wilson estate, South Penn Oil 15 2
Bing., 410, South Penn Oil 34 1
Bing, 181, South Penn Oil 19 5
Bing. 554, South Penn Oil 45 5
Bing. 376, Hazelwood Oil 13 10
Bing. 418, Grant & Mohan 7 5
Bing. 568, Associated Producers 361 2
Bing. 439, South Penn Oil 87 3
Bing. 494, South Penn Oil 43 1
Bing. 533, South Penn Oil 80 2
Bing. 494, South Penn Oil 42 9
Bing. 582, Associated Producers 350 1
Bing. 591, Associated Producers 348 5
Sill, Hope Oil 1
Hodge, South Penn Oil 1
Bingham, H. B. Oil 2
Pratt, Petroleum Reclamation 2
Pratt, Petroleum Reclamation 1
Pratt, Petroleum Reclamation 3
Ekas, R. C. Lloyd 3
Ekas, R. C. Lloyd 3
Chapin, Linwood Oil 4
Lovell, Ostrander et al 2
Whipple, South Penn Oil 1
Fee, K. Schoonover 2
Emerson, W. J. Healy 3
Jack, J. & H. M. Jack 2
Chamberlain, Slingerland Bros. 2
Fee, G. A. Simpson 1
Bingham, W. S. Jones & Son 2
Brennan, Coit Estate 3
Nesselson, Nesselson Bros. 5
Middaugh, A. L. & L. M. Lilly 2
Borden, T. B. Wilson 2
Scio, F. A. Duke 2
Norton, Kahle Oil 5
Borden, W. B. Miner 3
Borden, A. Schorman 2
Marvin, Potter & Devore 2
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Burns, E. M. Daly 2
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Gelpin, Simpson, Cooper & Co. 3
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Baldwin, F. E. Baldwin 2
Loop, C. B. Kervin 1
Kenyon, J. Minnich 3
Fee, C. W. Wasson 1
Sprague, S. J. Sprague 3
Baldwin, C. B. Kervin 2
Bingham, Paul Evans et al. 4
Wright, Wright & Johnson 2
Wright, E. H. & Retta Culbertson 4
Elder, S. H. Elder & Co. 4
Barry, Barry Estate 1
Elder, S. H. Elder & Co. 1

Wells completed 98
Production 315
Gas 1
Water 2

Middle Field

Tuttle, F. R. & H. J. Jennings 7 1
Tuttle, F. R. & H. J. Jennings 8 10
T. & W. O. Co., A. E. & W. C. Tompsett 72 1
Siggins, A. M. Doutt & Co. 15 gas
Knopf, N. Knopf 1
Lot 2,960, Horton, Crary & Co. 23 dry
Lot 304, Citizens Gas 1 dry
Kerr, F. & H. T. Berry 1 1
Kerr, F. & H. T. Berry 2 1
Kerr, Acme Oil 12 1
Kerr, Acme Oil 21 1
Kerr, Acme Oil 21 1

Wells completed 12
Production 18
Dry 2
Gas 1

VENANGO-CLARION

McDowell, C. T. McDowell 15 1
Waltz, Hoffman & Beighles 43 1
Phila. & Bradford, Sibley, Hancox et al 6 1
Clark, A. W. Bronson 4 abd
Porter, E. A. Burch et al 92 5
Beason & Wilbur, Wilbur & Beason 42 1
McCalmont 225 acres, S. P. McCalmont Estate 48 2
Dreibelbis, J. G. Dreibelbis 7 1
Nelson, Goldstein & Nusbaum 11 1
Chamberlain, Morek Oil 69 1
Call, L. T. Call 18 1
Call, L. T. Call 19 1
Byrne 20 acres, Hays, W. & G. N. Hess 2 1
Hodges, S. Y. Ramage 42 1
Heasley, George Eaton 36 1
Dempsey, Yanke, Suhr et al 10 2
Dempsey, Yanke, Suhr et al 11 1
Surrena, Franklin Trust 8 1
Wurster, S. P. McCalmont Est. 4 dry
Crawford & Gregory, Oil Well Sup. 109 dry
Lands, Crownoble & Cumings 1 dry
Nuhfer, T. H. Nuhfer 2 2
Foster & Sutton, Hunter & Franklin Trust 12 1
Freeport, Freeport 5 3
Freeport, Freeport 6 3
Clarion—
Beichner, Alum Rock Gas 4 gas
Kiser, S. L. Alleman et al 1 1
Lechner Earl Kelly et al 1 gas
Hess, Alum Rock Gas 7 1
Markle, Pollock Oil & Gas 9 gas
Terwilliger, B. F. Foust et al 3 2
McCleary, C. P. McCleary 2 dry
Cochran heirs, Freman, Colliner et al 1 3
Wilson, W. W. Wilson dry
Forest—
Crossman, Dale T. Crossman 1 gas
Mercer—
Graham, Ellenberger, Strong et al 5 1

Wells completed 35
Production 39
Dry 5
Gas 4

BUTLER-ARMSTRONG

Lutz heirs, Shoup & Co. 1 2
Setton, Cypher et al 1 dry
Shannon, Cypher et al 2 dry
Brewer, American Natural Gas 2 gas
Tomer, Joe Weiland et al 1 dry
Armstrong, T. W. Phillips Gas & Oil 5 5
McCarren, Lang & Co. 5 5
Butler, Lang & Co. 1 gas
Ifft, C. Ifft et al 1 gas
Mathews, Hunter & Crawford 1 1
Coffin, P. C. Bell et al 2 1
McGarvey, Sherwin, McGarvey et al 1 4
Robinson, W. E. Robinson dry

Wells completed 13
Production 18
Dry 4
Gas 3

ALLEGANY FIELD
Rigs

Fenton, E. M. Ketchner.
Fee, Albert Oil.
Reid, agent, Citizens National Bank Wvs. 46 et al.
Fee, Phillips & Howard.
Coast et al., M. J. Crowley et al.
Fee, Hazelwood Oil.
Fee, Alfonso Wilson.
Fee, Martin Bros. & Wasson.
Perkins, W. H. Lobaugh, trustee.

Wells Drilling

Clark, L. E. Norton et al.
Barner & Groves, Atwood & Stebbins.
Fee, McEwin et al.
Herrick, E. C. Garthwait et al.
Taylor, W. A. Dusenbury et al.
Wingard, McKean Natural Gas.
Fee, Empire Gas & Fuel, Ltd.
Fee, Empire Gas & Fuel, Ltd.
Fee, State Bank of Bolivar 28 and 29.
Fee, Phillips & Howard.
Fee, Grant T. Norton et al.
Fee, Citizens National Bank Wvs. 62.
Fee, C. C. Brennan et al.
McDermott, Willhart Oil.
Fee, M. J. Crowley et al.
Fee, A. H. McDonell heirs.
Coast et al., L. C. Shaver et al.
Fee, Gilligan & McDermott.
Fee, Gilligan & McDermott.
Beever, P. H. Dougherty et al.
Fee, F. W. Forners Jr.
Fee, State Bank of Bolivar et al.
Cass, F. J. Wilson.
Fee, Wm. Barton et al.
Fee, Martin Bros. & Wasson.
Rigs, 9; wells drilling, 25; total, 34.

BRADFORD FIELD
Rigs

Moore, Moore & Moody 10.
Lawton, Suhr, McSweeney Co. 90.
Riddle estate, South Penn Oil 49.
Rounds & Lawrence, South Penn Oil 49.
Franchot, H. & J. G. Shannon 12.
Fee, Howard Wile 12.
Fee, J. A. Walters estate 37.
Fee, South Penn Oil 39.
Associated Producers, Holding Oil Corp. 21.
Fee, Associated Producers 158.
Fee, Hilltop Oil 35.
Bing. 410, South Penn Oil 35.
Bing. 554, South Penn Oil 46
Bing. 370, Hazelwood Oil 15
Bing. 418, Grant & Mohan 8.
Bing. 439, South Penn Oil 92
Bing. 494, South Penn Oil 44
Bing. 499, South Penn Oil 45.
Bing. 533, South Penn Oil 79.
Bing. 591, Associated Producers 365.

Wells Drilling

Bing. 490, T. H. Kennedy 2, 136.
Bing. 500, Daly & Healy 25.
Bing. 540, Park & Bovaird 32.
Bing. 423, C. W. Henretta et al 21.
Bing. 389, D. W. Daly 41.
Bing. 432, J. A. Hooper 1.
Bing. 374, Wright & Burdick 4.
Fee, Curtis & Dunlavey Bros. 19.
Fee, A. W. McCandless & Sons 8.
Bing., D. L. Andrus et al 15.
Fee, E. Jack 22.
Fee, R. O. Landers et al 16.
Fee, L. G. Dana 17.
Franchot, F. M. Johnston & Son 21.
Fee, Hooker et al 5.
Fee, Dana & Dana 39.
Leasure, South Penn Oil.
Drake, Mrs. Joseph T. Jones.
Fee, Mrs. Joseph T. Jones.
Fee, South Penn Oil.
Fee, W. C. Kennedy Co. 52.
Bing., Hazelwood Oil 37.
Bing., Hazelwood Oil 110.
Bing., Hazelwood Oil 111.
Bing., Associated Producers 159.
Bing. Hillard & Dodge 18.
Fee, Roy C. Diment 11.
Bing. 139, Kennedy Co. 4, 57.
Fee, Hazelwood Oil 69.
Bing. 408, South Penn Oil 13.
Bing. 482, South Penn Oil 20.
Bing. 481, South Penn Oil 21.
Bing. 439, South Penn Oil 89.
Bing. 370, Hazelwood Oil 14.
Bing. 568, Associated Producers 363.
Bing. 439, South Penn Oil 91.
Bing. 590, Associated Producers 362.
Sill, Hope Oil.
Hodge, South Penn Oil.
Bingham, H. B. Oil.
Pratt, Petroleum Reclamation (3 wells).
Ekas, R. C. Lloyd (2 wells).
Whipple, South Penn Oil.
Garlock, Denwood Oil.
Bingham, H. B. & L. C. Brink.
Fee, F. S. Boquin.
Fee, Forest Oil.
Nesselson, Nesselson Bros.
Middaugh, A. L. & L. M. Lilly.
Borden, T. B. Wilson.
Norton, Kahle Oil.
Borden, W. B. Miller.
Keller, Wm. Hifler estate.
Haines, Coast & Storms.
Marvin, Potter & Devore.
Kapp, T. H. Kervin Jr.
D. C. & B., T. H. Kervin Jr.
Burns, A. E. Yahn.
Gelpin, Simpson, Cooper & Co.
Gelpin, T. P. Thompson.
Baldwin, C. B. Kervin.
Loop, C. B. Kervin.
Fee, C. W. Wasson.
Sprague, S. J. Sprague.
Bingham, J. L. Yerdon.
Bingham, Paul Evans et al.
Wright, Glen McCoed et al.
Elder, S. H. Elder & Co.
Rigs, 20; wells drilling, 71; total, 91.

MIDDLE FIELD

Wells Drilling

T. & W. O. Co., A. E. & W. C. Tompsett 73.
Ulf, Fidelity Petroleum 1.
Irvine, Hague & Co. 43.
Osgood, Rembold & Co. 11.
Knopf, N. Knopf.
Lot 7, J. C. Cochran 49.
Lot 3767, F. J. Moser 28.
Wells drilling 7.

VENANGO-CLARION
Rigs

McKissick, W. T. McKissick 6.
Baynham, Baynham & Edinger 10.

Wells Drilling

Blair, Reeves & Franklin Trust 45.
McCalmont 225a. S. P. McCalmont Est. 49.
Farringer, Citizens Banking 7.
Nicklin, S. Y. Ramage 64.
McCalmont et al., C. & L. Roess Trust Estate 21.
Flinchbaugh, C. G. Edward & Henry Flinchbaugh.
Plumer, Eakin & Hutchinson 44.
Riddle, L. E. Riddle & Co. 1.
Clarion—
O'Neill Bros., Alum Rock Gas 6.
Best, Wentling, Kribbs et al 2.
Garis heirs, Alum Rock Gas 2.
Rowe, Fry, Carroll & Hugus 3.
Beichner, Alum Rock Gas.
Tongley, Roundtown Oil & Gas 1.
Mercer—
McMullen, B. Turner & Sons 6.
Rigs, 2; wells drilling, 15; total, 17.

BUTLER-ARMSTRONG
Rigs

Shaner & Beilstein, Shaner & Co. 3.
Bogus heirs, R. C. & W. V. Binkerd.
Donnelly, Bear Creek Oil.
Thompson, Sherwin, Burns et al 1.

Wells Drilling

Criner heirs, Jos. Berry et al 1.
Gahagan, Saxonburg Light & Heat 1.
Byers, Byers & Son 7.
Clark, Charles Rumbaugh 1.
Delaney, Delaney Bros. 1.
McCollough, McCollough Gas 2.
Dewey Estate, Dewey Trust 1.
Ball, T. W. Phillips Gas & Oil.
McNally, American Natural Gas 1.
Hockenberry, Ingold & Ruby 2.
Shaner, South Penn Oil 16.
Harger, George Harger et al 1.
Frainheim, Wm. Sammis et al 1.
Rowan, P. Cradel et al 2.
Griffith, E. C. Griffith.
Rigs, 4; wells drilling, 15; total, 19.

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Caldwell, Caldwell & Co. 11 3
Quail Sisters, Tague & Co. 2 dry

ALLEGHENY COUNTY

Shelb, McCloy & Co. 1 gas
Chewers, Selkel & Co. 1 gas
Pgh. Coal Co., S. S. Nixon & Co. 1 gas
Benny, Duncan & Co. 1 3

BEAVER COUNTY

Kirk, H. R. Dev. Co. 1 dry
Jenkins, Big Beaver Oil Co. 2 gas

GREEN COUNTY

Thomas Lot, Garard & Co. 5 dry
Stephens, Phila. Oil Co. 4 gas
Renner, People's Gas Co. 1 gas
Graham, Dunn Mar O. & G. Co. 2 dry
Closser, Mfrs. L. & H. Co. 10 20
Pettit, Phila. Oil Co. 1 6

Wells completed 14
Production 31
Dry 4
Gas 6

WASHINGTON COUNTY
Rigs

Bedillion, Day & Bumgard 1.
Craft, Mfrs. L. & H. Co. 1.

Wells Drilling

Davis, Dallmeyer & Co. 1.
Lutton, Tague, Lutton & Co. 6.
Bruner, Howard O. & G. Co. 1.
Wilson, New O. & G. Co. 13.
Elliott heirs, Mfrs. L. & H. Co. 3.

ALLEGHENY COUNTY
Wells Drilling

Cemetery Lot, McCaffrey & Co. 1.
Hughner, Amer. N. G. Co. 2.
Wallace, Parker & Co. 2.
Elder, A. J. Boriand 1.
Wolfe, J. C. Nock 3.
Frank, Jones & Co. 1.
Kennedy, Pinkerton & Co. 1.
Bennett, Anderson & Co. 1.
Drain, Dunlay & Co. 1.
Wilson, J. T. Oles 1.
Shenot, Leidecker & Co. 4.
O'Neil, Phila. Oil Co. 6.

BEAVER COUNTY
Wells Drilling

Williams, R. B. Abrams 1.
Dawson, H. A. Thompson 5.
Troutman, Schuck & Co. 5.

GREENE COUNTY
Rigs

Caseman, Caseman O. & G. Co. 1.
Keller, Dunn Marr O. & G. Co. 1.
Snider, Covert Bros. & Co. 2.
Rutan, Consumers Gas Co. 1.

Wells Drilling

South, Fred Garrison 1.
Williamson, Fred Garrison 1.
Littman, Clovis O. & G. Co. 3.
Wade, Carnegie Gas Co. 1.
Delaney, Carnegie Gas Co. 1.
Lemley, Dunmar O. & G. Co. 2.
Longanaker, J. L. Garard 5.
Bell, Roy Clovis & Co. 1.
Strosnider heirs, Swastica O. & G. Co. 2.
Ritchie, People's Gas Co. 1.
Sellers, Fox O. & G. Co. 3.
Minor, People's Gas Co. 1.
Martin, Enterprise O. & G. Co. 1.
Plants, Carnegie Gas Co. 3.
Hoskinson, Milliken & Co. 3.
McCullough, Carnegie Gas Co. 1.
Stewart, Carnegie Gas Co. 3.
Scott, Carnegie Gas Co. 2.
Rutan, Carnegie Gas Co. 2.
Day, Tague & Cummings 1.
Powers, N. G. Co. of W. Va. 2, 3.
Rutan, N. G. Co. of W. Va. 3.
Ray, Mfrs. L. & H. Co. 1.
Wright & Co., Mfrs. L. & H. Co. 7.
Huffman, Waynesburg Home Gas Co. 1.
Rigs, 6; wells drilling, 46; total, 52.

SOUTHEASTERN OHIO
WELLS COMPLETED
MONROE COUNTY

Anderson, Sylvan O. & G. Co. 8 1

PERRY COUNTY

Trimmer, Ohio F. S. Co. 2 9
Sunday C'k C. Co., Sunday C'k C. Co. 132 25
Durst, Iron Mountain O. Co. 4 gas

HOCKIN COUNTY

Anthony, Gordon Oil Co. 2 95
Starr, Griffin Prod. Co. 12 dry
Sweezey, Stewart & Co. 2 dry
Jones Coal Co., Shaw & Co. 1 dry
Dawley hrs., Ohio F. S. Co. 4 10

ROLLINS COUNTY

Eis, Empire G. & F. Co. 1 dry
Mast, Logan Gas Co. 2 25
Kendall, East Ohio Gas Co. 3 gas
Miller, Pure Oil Co. 2 5
Smith, Pure Oil Co. 1 35
Mohr, Klice & Co. 1 gas
Lowe, Empire G. & F. Co. 1 20
Uhl, Ohio Fuel Gas Co. 5 gas
Korns, Ohio Fuel Gas Co. 3 10
Bird, East Ohio Gas Co. 2 gas

MUSKINGUM COUNTY

Brown, Carter Oil Co. 1 dry
Ashcraft, Pure Oil Co. 3 15

LICKING COUNTY

Simpson, E. H. Everett Co. 1 75
Bowers, Whitehill & Co. 5 75
Watts, Carter Oil Co. 22 gas
Booth, Ohio F. S. Co. 2 gas
Hardesty, Ark. Fuel Oil Co. 3 5
Weiss, Denbow & Co. 6 2
McKinney, Jones, Reese & Co. 22 2
Ferry, E. J. Edmonds 3 6
Stair, E. J. Edmonds 7 6
Dudgeon, Pure Oil Co. 12 2
Dishennett, J. T. Benout 1 3
Neibarger, Haynes & Holland 2 4
Martin, A. H. Heisey Co. 1 dry
Kiger, Ohio F. S. Co. 5 gas
Hickman, Wehrle Bros. 1 1
Hickman, Wehrle Bros. 2 50
Louks, Wehrle Bros. 2 1
Fleming, Wehrle Bros. 1 dry

Vandenbark, Carter Oil Co. 9 50
Evans, Wehrle Bros. 2 1

COSHOCTON COUNTY

Wolford, Spindle, Donan & Co. 4..... 5
Fair, Ohio Oil Co. 14 10
Vanwinkle, Preston Oil Co. 1..... 30

FAIRFIELD COUNTY

Petty, Planet Oil Co. 1 ..... dry
Kreger, Kreger O. & G. Co. 1 20
Helsen, Brush Creek O. & G. Co. 1.. dry
Groff, Hufford & Co. 2 ..... dry

MORGAN COUNTY

Barringer, Pure Oil Co. 2 10
Weaver, Pure Oil Co. 3 5
Floyd, Carter Oil Co. 2 ..... gas
Stoneburner, Ark. O. & G. Co. 2 ..... gas
Longsreth, Long O. & G. Co. 1 ..... gas
Switzer, York O. & G. Co. 1 ..... dry

KNOX COUNTY

Scholes, East Ohio P. & R. Co. 8..... 2

NOBLE COUNTY

Coal Lands, Kinsey & Co. 5 5
Ogle, Way Wickens 3 2
Misel, Levi Gall & Co. 1 1
Devoll, Cain-Devoll O. Co. 9 ..... dry
Marsh, Marsh Oil Co. 2 1
Schwallie, Dimmerling & Co. 1 ..... gas

MUSKINGUM COUNTY

Lott, Penna. Berea Co. 1 6
Jividen, Ohio F. S. Co. 4 ..... gas
G. & Z. Purvis, Pure Oil Co. 2 4
Jividen, W. N. Hovis, 2 5
Nease, Carter Oil Co. 1 ..... gas
Cross, Creel Bros. & Co. 1 2
L. Cross, R. G. Gillespie 4 3
L. Cross, R. G. Gillespie 2 3

ATHENS COUNTY

Hanning, Southern Oil Co. 1 ..... dry
Murphy, Southern Oil Co. 4 2
Tribe, Townsend & Co. 1 ..... dry
Athens Storage Co., Athens Storage Co. 1 ..... dry
Wood, Cook & Co. 2 ..... dry
Radford, Park & Co. 1 ..... gas

KNOX COUNTY

Greer, Brook Reed 1 ..... gas

WASHINGTON COUNTY

Theobold, McIntyre & Co. 24 4
Dana, Reckard & Co. 11 ..... dry
Johnson, Parks & Co. 1 2
King, Epler & Co. 2 ..... dry
Johnson, E. L. Yager, trustee 3 ..... gas
Jackson, First Nat'l Bank 3 4
Rubrake, Hess & Sons 10 ..... dry
Driscoll, Phillips & Co. 3 1

JEFFERSON COUNTY

Hardesty heirs, Carnegie O. & G. 3.... 10
Grouch, Georges Run Gas Co. 2..... gas
McCullough, Robertson & Co. 1 ..... dry

Wells completed	87
Production	729
Dry	20
Gas	18

MONROE COUNTY

Rigs

Heddleson, Sylvan O. & G. Co. 5.

Wells Drilling

Scott, Carter & Co. 4.

PERRY COUNTY

Rigs

Hemlock Coal Co., Kachelmacher Est., 2.
McCullough, Carter Oil Co. 1.

Wells Drilling

Paxton, Holliday O. & G. Co. 1.
Melick Bros., Atha Oil Co. 21.
McCourtney, Southern Oil Co. 9.
Conaway heirs, Pure Oil Co. 1.
Briggs, Ohio Oil Co. 1.

HOCKING COUNTY

Rigs

Athony, Gordon Oil Co. 3.
Miller heirs, Ohio F. S. Co. 1.
Mercer, Carter Oil Co. 1.
Thresh, Unknown 1.
Riggs, Unknown 1.

Wells Drilling

Brimner, Gordon Oil Co. 3.
O'Donnell, Ohio F. S. Co. 3.
Huggins, Ohio F. S. Co. 1.
Miller heirs, Graystone Oil Co. 2.
Rauner, Preston Oil Co. 3.
Marks, Preston Oil Co. 2.
Rauber, Rauber Oil Co. 1.
Tracey Est., Kachelmacher Est., 19.
Sunday C'k C. Co., Sunday C'k C. Co. 133.
Acker heirs, Murray City O. & G. Co. 7.
Bowlby, Old Town O. & G. Co. 1.
Cobb-Bradley, A. H. Squire, 15.
Fling, Hocking Valley Drilling Co. 2.

HOLMES COUNTY

Rigs

Carnet, Pure Oil Co. 3.
Reese, Empire G. & F. Co. 1.
Schenauer, Ohio Oil Co. 2.
Forgy, East Ohio Gas Co. 5.
Gelley, East Ohio Gas Co. 3.

Wells Drilling

Close, Pure Oil Co. 1.
Kendall, East Ohio Gas Co. 4, 5.
Carnet, Pure Oil Co. 4.
Kendall, Empire G. & F. Co. 2.
Baker, Empire G. & F. Co. 1.
Miller, Ohio F. G. Co. 1.
Reed, Ohio Co. 1.
Fites, Klice, Eckstein & Co. 1.
Miller, Ark Fuel Oil Co. 1.
Gordon, Empire G. & F. Co. 1.
Conner, Empire G. & F. Co. 3.
Bird, East Ohio Gas Co. 2.
McCullough, East Ohio Gas Co. 3.
Hastings, East Ohio Gas Co. 1.
Uhl, East Ohio Gas Co. 4.

GUERNSEY COUNTY

Rigs

Keith Bros., Keith & Co. 1.

Wells Drilling

Nelson, Jr., Ohio Fuel Gas Co. 1.
Summafrank, Ohio Fuel Gas Co. 1.
Donnelly, Ohio Fuel Gas Co. 1.
Patton, Ohio Fuel Gas Co. 1.
Miser, Logan Gas Co. 1.

MUSKINGUM COUNTY

Rigs

Irwin, Pure Oil Co. 1.

Wells Drilling

Unterzumbar, Stoltz & Co. 1.
Burris, Black & Co. 1.
Wright, Pure Oil Co. 3.
Ashcraft, Pure Oil Co. 4.

LICKING COUNTY

Rigs

Fleming, W. W. & A. T. Wehrle 1.
Stitt, Whitehill & Co. 6.
Romine, E. H. Everett Co. 2, 4.
Mercer, Carter Oil Co. 2.
Ferry, E. J. Edmonds 4.
Smith-Wareham, W. W. & A. T. Wehrle 8.

Wells Drilling

McCann, Pure Oil Co. 1.
Still, Whitehill & Co. 5.
Vandenbark, Carter Oil Co. 11.
Romine, E. H. Everett Co. 3.
Bogle, Midland Oil Co. 1.
Orr, Midland Oil Co. 3.
Morehead, Pure Oil Co. 18.
Dugan, Ark. Fuel Oil Co. 13.
Weekly, Heisey & Co. 4.
Michael, Pure Oil Co. 2.
Farmer, Pure Oil Co. 3.
Claypool, E. H. Everett Co. 9.
Montgomery, E. H. Everett Co. 5.
Vandenbark, Carter Oil Co. 12.

COSHOCTON COUNTY

Rigs

McKee, Spindler, Donan & Co. 4.
Hall, Pure Oil Co. 4.
Fair, Ohio Oil Co. 15.
Conklo, East Ohio P. & R. Co. 2.

Wells Drilling

Ashcraft, Pure Oil Co. 13.
Henderson, Pure Oil Co. 1.

FAIRFIELD COUNTY

Rigs

Buren, Ohio F. S. Co. 1.
Ruff, Sharpneck & Co. 1.

Wells Drilling

Ruff, Carter Oil Co. 1.
Turner, Ohio F. S. Co. 1.

MORGAN COUNTY

Rigs

Worthington, Metcalf & Co. 7.
Lovell, Glazier & Co. 9.
Bush, Pure Oil Co. 3.
Fye, Pure Oil Co. 5.
Finley, Carter Oil Co. 4.
Hudson, Carter Oil Co. 2.
Detrow, Carter Oil Co. 2.

Wells Drilling

Swytzer, Sun Oil Co. 12.
Souders, Sun Oil Co. 9.
Hughes, Pure Oil Co. 4.
Smith, Pure Oil Co. 6.
Baringer, Pure Oil Co. 11.
Epley, Pure Oil Co. 7, 8.
Harrop, J. W. Rusk 9, 1.
Driggs, Ohio Oil Co. 1.

KNOX COUNTY

Rigs

Gann, Pure Oil Co. 1.

Wells Drilling

Neff, East Ohio P. & R. Co. 1.
Mowery, Ohio F. S. Co. 1.
Rabjohn, Ohio F. S. Co. 2.
Rowland, Ohio F. S. Co. 1.

NOBLE COUNTY

Wells Drilling

Walters, Wahn. & Noble O. & G. Co. 1.
Miley, Ohio F. S. Co. 1.
Williams, Herds O. & G. Co. 3.
Devoll, Cain-Devoll Oil Co. 10.
Secrest, Decker & Co. 1.
Thomas, Brown & Co. 1.
Boyd, Rucker & Co. 1
Nau, Nau & Co. 10.
Bettinger, Schnider & Co. 2.

MEIGS COUNTY

Rigs

Krider heirs, Pure Oil Co. 3.

Wells Drilling

Cox, Ohio F. S. Co. 1.
Davis, Meigs & Summers 1.
Gospett, Goldish & Co. 1.

ATHENS COUNTY

Wells Drilling

Whaley, Beasley & Co. 8.
Parker, Ohio Oil Co. 1.
Wood, Ronhausen & Co. 4.
Lawson, Bickle & Co. 3.

WASHINGTON COUNTY

Rigs

McConnell, Clark & Todd 6.
Brown heirs, Brown Oil Co. 3.

Wells Drilling

Thomas, T. E. Lawrence 1.
Mendenhall, Buchannan & Wise 33.
Morrow, Beeson & Co. 7.
Farley heirs, Heifman & Co. 1.
Ridgeway, Rice & Co. 4.
Bosel, P. G. Mufher 1.
Hupp-Murray, Beeson & Athey 10.
Wetz, W. Paterson 7.
Henniger, Burk Bros. & Co. 1.
Wickens, Dillon & Co. 34.
Driscoll, Phillips & Co. 4.
Hull, Carnar & Co. 1.

JEFFERSON COUNTY

Rigs

McCullough Bros., Featner & Co. 3.

HARRISON COUNTY

Wells Drilling

Morehead, Osborne & Co. 1.

CARROLL COUNTY

Wells Drilling

Herrington, N. G. of W. A. 2.
Allen, Unknown parties 1.
Dorrance heirs, Brown, Vorhees & Co. 1.
Blackledge, N. G. Co. of W. A. 2.

BELMONT COUNTY

Lyne, Pure Oil Co. 1.

COLUMBIANA COUNTY

Wells Drilling

Teeters, Benninghoff & Co. 13.
King, Maxwell & Co. 1.
Rigs, 41; wells drilling, 108; total, 149.

WEST VIRGINIA

WELLS COMPLETED

HARRISON COUNTY

Davisson, Phila. Oil Co. 1..... 3
Williams, Jarett & Lyons O. & G Co. 1 5
Ferris, R. S. Monroe 4..... dry
Nutter, Hope C. & R. Co. 3..... 7
Lowndes, Patterson Fork Oil Co. 8.. dry
Pepper, F. G. Bird 1..... gas
Cogenor, Reserve Gas Co. 1..... 6
Shuttleworth, Grasselli Chem. Co. 1.... gas
Burnside, Hope Gas Co. 1..... gas

MARION COUNTY

Blackshere, So. P. O. Co. 9..... gas
Freeland, Owens B. & M. Co. 1..... gas
Koen, Monroe & Co. 1..... gas

MONONGALIA COUNTY

Tennant, Mfrs. L. & H. Co. 1..... gas
Hill, Hope Gas Co. 1..... gas

WETZEL AND TYLER COUNTIES

Howell, Carnegie Gas Co. 1..... dry
Ott, Carnegie Gas Co. 1..... dry
Antill, Carnegie Gas Co. 1..... 10
Ritter, Hope C. & R. Co. 4..... 5
Pierson, Robinson & Co. 1..... 5
Orndoff, Milliken & Co. 2..... gas
Stewart, Albert Neeley 2..... dry
Riggs, Hope Gas Co. 1..... dry

MARSHALL COUNTY

Myers, Mfrs. L. & H. Co. 1..... gas
Reid, Mrfs. L. & H. Co. 1..... dry
Riter, Mfrs. L. & H. Co. 2..... 10
Conaway, Mfrs. L. & H. Co. 1..... gas
Conaway, Carnegie Gas Co. 6..... dry
Hazlett, Wasmuth & Kallehan 1..... dry
McCracken, P. O. M. & B. Co. 1..... dry
Blake & Co., Mfrs. L. & H. Co. 2..... 5
Young-Fair, Blake Lease Association 1 15

HANCOCK COUNTY

Carrothers, Miller & Co. 1..... gas

DODDRIDGE COUNTY

Ellifritt, Hope C. & R. Co. 9..... gas
Rollins, Murphy Oil Co. 6..... 15
Maxwell, Columbia Carbon Co. 56..... gas
McKinney, Maxwell & Co. 1..... gas
Hudson hrs., Continental O. & G. Co. 3 dry
Freeman, Clifton O. & G. Co. 9..... gas

RITCHIE COUNTY

Sheffler, Pgh. & W. Va. Gas Co. 2.... dry
Ireland, Carnegie Gas Co. 3..... gas
Kelly, Carnegie Gas Co. 1..... gas
Riggs, Carnegie Gas Co. 2..... gas
Simmons, Pgh. & W. Va. Gas Co. 1.. dry
Vincent, Hope Gas Co. 1..... dry
Mitchell, Rinehart & Co. 1..... 60
McGinnis, H. P. McGinnis 1..... 2
Bush, Hughes River Gas Co. 1..... gas
Twyman, P. McDonough 1..... dry
Cain, Mellon & Co. 3..... gas
Loomis, Jackson & Co. 1..... gas
Jameson, French & Co. 1..... gas
French, Adams Oil Co. 1..... dry

GILMER COUNTY

Vanney, Phila. O. & G. Co. 1..... gas
Brannon, Phila. Oil Co. 1..... dry

WIRT COUNTY

Enoch, Darby & Son 1..... gas
Vandevender, W. C. Patterson 15..... 1
Rathbone tract, Roberts Bros. 143..... 2

BRAXTON COUNTY

Livingston Turner & Co. 1..... 10

WOOD COUNTY

Carney, Bennett, Earl & Co. 1..... dry
Elliott, Crumley Oil Co. 10..... 1
Newbanks, So. P. O. Co. 10..... 2
Lauer, Reed & Co. 2..... dry
Corley, Smackover Oil Co. 1..... dry
King, So. P. O. Co. 10..... dry

PLEASANTS COUNTY

Gorrell hrs., Cleary & Co. 1..... dry
Parker hrs., Parker Farm Oil Co. 2.. dry
Bills, Gallaher & Co. 1..... gas
Dunn, Hope C. & R. Co. 1..... gas

ROANE COUNTY

Haynes, Chartiers O. & G. Co. 1..... gas
Moore, G. L. Cabot 1..... gas
Keffer hrs., G. L. Cabot 1..... dry
Carson, Heck Oil Co. 1..... gas
Burroughs, Heck Oil Co. 2..... 10
Stewart hrs., Heck Oil Co. 2..... 30
Fry, Ohio Fuel Oil Co. 1..... 1

CALHOUN COUNTY

Watten hrs., McIntosh & Miller 4.... gas
McEndree, Hope C. & R. Co. 1..... gas
Pool, Hope C. & R. Co. 2..... 15
Stump hrs., Bickle Bros. 6..... gas
Hoard, Euclid O. & G. Co. 1..... 15

JACKSON COUNTY

Battis, Ohio F. O. Co. 1..... 1

CLAY COUNTY

Casto 260 a., Virginia G. & O. Co. 5... 15
Casto 260 a., Virginia G. & O. Co. 8.. 30
Stockly, So. P. O. Co. 4..... 25
Stockly, So. P. O. Co. 5..... 20

LINCOLN COUNTY

Keeny, Ohio F. O. Co. 2..... gas
Hudson, Grant Gas Co. 1..... gas
Roberts, Col. G. & E. Co. 1..... gas
McCallister, Grant Gas Co. 1..... gas
Stowers, Carter Oil Co. 1..... gas
Alford, Tampico O. & G. Co. 2..... gas
Guthrie, Tampico O. & G. Co. 1..... gas
Ashworth, Grant Gas Co. 2..... gas
Keeny, Ohio F. O. Co. 1..... gas
King, G. T. Ray 2..... gas
Abbott, G. T. Ray 1..... gas
Linville, Cambridge Gas Co. 2..... gas

KANAWHA COUNTY

Halstead, U. F. G. Co. 3..... gas
Summers, Oakland Dev. Co. 1..... gas

PUTNAM COUNTY

Frazier, Kirtley & Co. 5..... 5
White, Mid-South O. & G. Co. 1..... dry

CABELL COUNTY

Kilgore, Harshbarger O. & G. Co. 3.. gas
Paul, C. & D. Gas Co. 3..... dry
Bumgardner, Shipe & Co. 1..... gas

MINGO COUNTY

Closterman Est., Public Gas Corp. 10 gas
Cannel Coal Co., Public Gas Corp. 13 dry

Wells completed	106
Production	281
Dry	27
Gas	50

LEWIS COUNTY

Wells Drilling

Horner, Carnegie Gas Co. 1.
Boylison, Phila. Gas Co. 1.
Wilson, Phila. Gas Co. 1.
Bennett, Phila. Gas Co. 1.
Whaley, Whaley & Co. 1.

HARRISON COUNTY

Rigs

Turner, Furno Oil Co. 6.
Reed, Reserve Gas Co. 1.
West, Standard Gas Co. 1.

Wells Drilling

James, Bradley & Alder 4.
Myers, So. P. O. Co. 4.
Nutter, Southern Oil Co. 2.
Smith Bros., Reserve Gas Co. 1.
Pittroe, S. L. Horner 1.
Hamerick, Reserve Gas Co. 1.
Carter, Reserve Gas Co. 1.

MARION COUNTY

Wells Drilling

Moore, Carnegie Gas Co. 1.
Thorn, Owens B. & M. Co. 1.
Cunningham, Owens B. & M. Co. 1.
Flemming hrs., Morgantown O. Co. 1.

MONONGALIA COUNTY

Rig

Moore, J. H. McDermott O. Co. 1.

Wells Drilling

White, Mfrs. L. & H. Co. 3.
Wise, Custer Dev. Co. 1.
Tennant, So. P. O. Co. 3.
Brewer, So. P. O. Co. 2.
Varner, Dun Mar O. & G. Co. 9.
Shuman, Carnegie Gas Co. 1.

WETZEL AND TYLER COUNTIES

Rigs

Antill, Johns Gas Co. 5.
Little & Co., Johns Gas Co. 3.
Riter, Hope C. & R. Co. 5.
Eddy, McIntire Bros. O. Co. 1.
Christy hrs., Hays & Co. 1.
Henderson, Mfrs. L. & H. Co. 1.
Hostutler, Mfrs. L. & H. Co. 1.
Mayne, Phillips & Mayne 1.
Thorn, Morgan Bros. O. & G. Co. 1.
McGinnis, H. L. Lambert 8.
Clark, Mfrs. L. & H. Co. 3.
White, Mfrs. L. & H. Co. 1.

Wells Drilling

Knapp, Mfrs. L. & H. Co. 5.
Riter, Hope C. & R. Co. 2.
Stewart, Hope C. & R. Co. 1.
Spencer hrs, A. O. D. Co. 1.
Mason, Wiser Oil Co. 1.
Bates, Trainer Bros. & Ash 1.
Riggenbach, Silver Hill Oil Co. 1.
Springer, Carnegie Gas Co. 1.
Russell, Carter Oil Co. 39.
Norris, So. P. O. Co. 6.
Gover hrs., Clovis & Co. 1.
Marline, Carter Oil Co. 1.
Hissam, Reno Oil Co. 5.
Henderson, Albert Neeley 1.
Galloway, A. S. McCullough 2.
Lemaster, Mfrs. L. & H. Co. 1.
Ritter, Mfrs. L. & H. Co. 1.
Ritter, Mfrs. L. & H. Co 2.
Long, Myers O. & G. Co. 1.
Long, Hope C. & R. Co. 2.
Miller, Carnegie Gas Co. 1.
Smith, Bundy Bros. 1.
Williams hrs., Shrader Oil Co. 1.

MARSHALL COUNTY

Rigs

Conway, Mfrs. L. & H. Co. 2.
Calvert, Mfrs. L. & H. Co. 2.
Bonar, Deem Dev. Co. 5.
Shaffer, Deem Dev. Co. 1.
Riley hrs. Lease 2, W. & K. Oil Co. 1.
McConaghey, Mfrs. L. & H. Co. 3.

Wells Drilling

Keller, Mfrs. L. & H. Co. 5.
Conway, Carnegie Gas Co. 3.
McCluskey hrs., Waynesburg Gas Co. 1.
Markey, Shadyside O. & G. Co. 1.
Sterns, Hope Gas Co. 1.
Cole, Carnegie Gas Co. 2.
Howard hrs., Mfrs. L. & H. Co. 3.

HANCOCK COUNTY

Well Drilling

Boumont Land Co., Ward & Co. 1.

DODDRIDGE COUNTY

Rigs

Williams, Nay & Kintzer 3.
Burbridge, Gribble & Co. 2.
Kelly, Trainer & Travis 2.
Shrader, Keystone O. & G. Co. 1.
Freeman, Clifton O. & G. Co. 10.
Smith, Carter Oil Co. 5.

Wells Drilling

Leeson, Carter Oil Co. 2.
Williams, Hope V. & R. Co. 7.
Dotson, Vincent Oil Co. 1.
Williams, Nay & Kintzer 1.
Maxwell, Phila. Oil Co. 4.
Maugahy, Hope C. & R. Co. 1.
Jandehart, Eastern Oil Co. 5.
Hedlin, Mfrs. L. & H. Co. 2.
Knight hrs., Roy Shinn 1.
Snyder, G. B. Travis 1.
Freeman, Clifton O. & G. Co. 11.
McKinney, Carter Oil Co. 2.

RITCHIE COUNTY

Rigs

Davisson, Carnegie Gas Co. 1.
Goff, Carnegie Gas Co. 3.
Donnelly, E. E. Pope 1.
Dye, Hope C. & R. Co. 2.
W. Va. Tract, Whitewood O. Co. 29.
Mason, P. A. McDonough 1.
Pope, E. E. Pope 2.
Maxwell, Lucky Day O. & G. Co. 1.
Mosser, Kelly & Co. 1.

Wells Drilling

Fleming, Carnegie Gas Co. 3.
Summers, Carnegie Gas Co. 1.
Campbell, Pgh. & W. Va. Gas Co. 2.
Simmons, Stephens Drilling Co. 1.
Jarrett, Mud Lick Gas Co. 1.
Sheets, Pgh. & W. Va. Gas Co. 1.
Jett, Hope C. & R. Co. 1.
McCosh hrs., Wilson & Co. 1.
W. Va. Tract, Williams & Co. 29.
W. Va. Tract, Cold Test Oil Co. 15.
McFarlan, Reeter & Co. 1.
Kearns, Little & Co. 1.
Snyder, McGinnis & Co. 1.
Jonas, Coss O. & G. Co. 3.
Rector, Rector Bros. 2.
Howell, Moore & Co. 1.
Devaugh, Unknown 1.
Atkinson, So. P. O. Co. 1.
Kelly hrs., Swingle Oil Co. 1.
Garrison hrs., Griffin Prod. Co. 1.
Kennedy hrs., Powell & Co. 1.
Hartman, Hope C. & R. Co. 1.
Lowther, So. P. O. Co. 6.
Shuman, Big Four Drilling Co. 1.
Adams, Rawe Bros. 1.

GILMER COUNTY

Rig

Tierney, Jas. Tierney 3.

Wells Drilling

Gainer, Star Prod. Co. 2.
Hardman, Troy-Zinn & Co. 1.

WIRT COUNTY

Wells Drilling

Barnett, So. P. O. Co. 3.
Eagle, Graham O. & G. Co. 6.

BRAXTON COUNTY

Wells Drilling

Maiple, Daivis & Maiple 1.
Chenowell, Hope Gas Co. 1.

WOOD COUNTY

Rigs

Curtis & Co., Quick-Davis O. Co. 1.
Gratt hrs., So. P. O. Co. 3.

Wells Drilling

Howard, So. P. O. Co. 1.
Walker, So. P. O. Co. 11.
Ewins hrs., Jonas & Parks 1.

PLEASANTS COUNTY

Rigs

Wagner, Monogalia Oil Co. 14.
Neely, Jones & Co. 1.

Wells Drilling

Newland, White & Casper 1.
Wagner, Bottom Oil Co. 5.
Gale hrs., Samuels & Gale 10.
Hammett hrs., Morgan & Co. 2.
Holdren, Holdren Farm O. Co. 1.
Cooper, Rice Oil Co. 1.
Ross Est., Aetna O. & G. Co. 13.
Gorrell hrs., Jeanette O. & G. Co. 4.
Lamp, Bebout & Co. 1.

ROANE COUNTY

Rig

Field, Green Camp O. & G. Co. 1.

Wells Drilling

Young, Richards & Co. 1.
Brown & Co., Brown Farm Oil Co. 3.
McDade, Carter Oil Co. 2.

CALHOUN COUNTY

Rigs

Richards, Chemical Oil Co. 1.
Offutt, Hope C. & R. Co. 1.
Board, Euclid O. & G. Co. 2.

Wells Drilling

Duffield, Hope C. & R. Co. 3.
Scott, G. L. Cabot 1.
McClain, Satterfield & Co. 2.
Jarrett, So. P. O. Co. 1.
I. O. O. F. Lot, W. H. Bickle 1.

CLAY COUNTY

Rigs

Cato, Virginia G. & O. Co. 9.
Stockly, So. P. O. Co. 2.

Wells Drilling

Casto, Virginian G. & O. Co. 7.

Hall, United F. G. Co. 1.
Goshorn-Brown, United F. G. Co. 1.
Samples, United F. G. Co. 1.
Casto, Ohio F. O. Co. 4, 5.
Stockly, So. P. O. Co. 2, 6, 7, 8.

LINCOLN COUNTY
Rigs
Adkins, Orlandi O. & G. Co. 3.
Williams, Dunbar Gas Co. 1.
Wells Drilling
McCallister, Cambridge Gas Co. 2.
Adkins, L. R. Sweetland 2.
Lincaus, Col. G. & E. Co. 2.
Hodge, Carter Oil Co. 2.
Hicks, Maul Rock O. & G. Co. 1.
Cadwell, E. E. Wolf 1.
Commercial Realty Co., Commercial Realty Co. 1.
Wheeler, Kingrey Gas Co. 1.
Nelson, Grant Gas Co. 1.
Williams, C. & B. Gas Co. 1.
Carpenter, Grant Gas Co. 1.
Dent, Grant Gas Co. 1.
Goode, Foot O. & G. Co. 1.

KANAWHA COUNTY
Rigs
Edens, U. F. G. Co. 1.
Halstead, U. F. G. Co. 3.
Roane Land Co., Allegheny O. & G. Co. 2.
Wells Drilling
Duval, Superior Oil Co. 4.
Updegraff, U. F. G. Co. 3.
Ballie, So. P. O. Co. 5.
Canterbury, U. F. G. Co. 1.
Taylor, U. F. G. Co. 1.
Jennings, U. F. G. Co. 1.
Dodd & Co., So. P. O. Co. 1.
Fogarty, Poca Fork O. & G. Co. 5.
Jarrett, Columbian Carbon Co. 2.

BOONE COUNTY
Wells Drilling
Yawkey-Freeman, So. P. O. Co. 20.
White, So. P. O. Co. 1.
Williams Coal Co., Pure Oil Co. 213, 223.
L. R. & P. Tract, Pure Oil Co. 6, 26.
L. R. & P. Tract B, Pure Oil Co. 17.
Robson-Pritchard, Pure Oil Co. 6.
Bedford, Owens B. & M. Co. 1.
C. R. M. Co., Owens B. & M. Co. 5.
Little Coal Land Co., Owens B. & M. Co. 3.
Cassingham, Owens B. & M. Co. 9.
B. C. L. Co., Owens B. & M. Co. 5.
Alderson L. & D. Co., G. L. Cabot 1.
White, G. L. Cabot 1.
Sutphin, Dennison O. & G. Co. 1.
Coon, Dennison O. & G. Co. 1.
Dempsey, Pilgrim O. & G. Co. 1.

LOGAN COUNTY
Rig
Dingess Run C. Co., Wacarock O. & G. Co. 7.
Wells Drilling
Yawkey-Freeman, So. P. O. Co. 16, 17, 21.
Dingess Run C. Co., Wacatock O. & G. Co. 12.
Yawkey-Freeman, Wacatock O. & G. Co. 1.
McDonald, Wacatock O. & G. Co. 1.
Cole-Crane, Zonhelmer & Gibbs 3.
Cole-Crane, Carter Oil Co. 3.

PUTNAM COUNTY
Wells Drilling
Simms, Kirtley & Co. 1.
Griffith, Anchor Oil Co. 1.

CABELL COUNTY
Rigs
Kirtley, Aetna O. & G. Co. 1.
Chapman, Aetna O. & G. Co. 1.
Wells Drilling
Davidson, Aetna O. & G. Co. 1.
Hackworth hrs., Monickel Gas Co. 1.
Keyser, Commercial Gas Co. 1.

WAYNE COUNTY
Wells Drilling
Burks, Chartiers Oil Co. 1.
Burgess hrs., O. F. O. Co. 1.
Reynolds, Col. G. & E. Co. 1.
Rigs, 56; wells drilling, 182; total, 238.

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Fairfield	0	0	0	0	1	1	2
Knox	4	0	0	4	3	4	7
Ashland	12	0	4	8	0	9	9
Medina	4	0	2	2	0	6	6
Lorain	6	0	1	5	3	10	13
Wayne	2	5	0	1	1	10	11
Holmes	11	263	1	6	5	14	19
Jackson	0	0	0	0	1	1	2
Hocking	0	0	0	0	0	1	1
Athens	7	0	1	6	0	6	6
Coshocton	3	158	0	1	4	2	6
Cuyahoga	1	0	0	1	0	0	0
Guernsey	2	0	0	2	3	0	3
Tuscarawas	0	0	0	0	0	2	2
Total Nov.	52	426	9	36	21	66	87
Total Oct.	42	296	7	28	30	65	95
Difference	10	130	2	8	9	1	8

WELLS COMPLETED
KNOX COUNTY
Jefferson—Rilla Rabjohn, Ohio Fuel Gas 2 ..... gas
R. W. Mowery, Ohio Fuel Gas 1 ..... gas
Jas. D. Greer, J. B. Reed & Co. 2.. gas
S. V. Beck, I. E. O'Hall 1..... gas

Wells completed 4
Gas 4

ASHLAND COUNTY
Hanover—E. P. Kick, Logan Gas 1 .... gas
Mary Beary, Logan Gas 1 ..... dry
Greene—P. C. Cewan, Logan Gas 3..... gas
P. C. Cowan, Logan Gas 4 ..... dry
C. L. Carey, Wm. Hawk & Co. 2 ... dry
M. Heffelfinger, Ohio Fuel Gas 1... gas
Orange—L. M. Helbert, Ohio Fuel Gas 1 gas
H. B. Wertman, Logan Gas 2 ..... gas
Floyd Shauer, Logan Gas 1 ..... gas
J. R. McConnell, Logan Gas 2 ..... gas
Wm. Baughman, Orange Oil & Gas Corp. 1 ..... dry
Troy—S. Sponsler, Klise-Eckstein-McCann 1 ..... gas

Wells completed 12
Dry 4
Gas 8

MEDINA COUNTY
Lafayette—R. O. Wheeler, Ohio Fuel Gas 1 ..... gas
Hinckley—W. Warner, Ohio Fuel Gas 2 dry
Brunswick—Laura Oberholt, Ohio Fuel Gas 1 ..... gas
Homer—D. Wendall, Ohio Fuel Gas 1. dry

Wells completed 4
Dry 2
Gas 2

LORAIN COUNTY
Columbia—M. G. Weekley, Ohio Fuel Gas 2 ..... gas
Lesla Barber, Ohio Fuel Gas 1..... gas
Sylvia A. Ives, Logan Gas 2 ..... gas
Frank Ives, Logan Gas 1 ..... gas
Wm. Rundel, Logan Gas 1 ..... dry
Oliver Leitner, Empire Gas & Fuel 3 gas

Wells completed 6
Dry 1
Gas 5

WAYNE COUNTY
Cannan—A. J. Irvine, Ohio Fuel Gas 2 5
Baughman — Catherine Geiser, Logan Gas 1 ..... gas

Wells completed 3
Production 5
Gas 1

HOLMES COUNTY
Monroe—Newton Lowe, Empire Gas & Fuel 1 30
B. P. Uhl, Ohio Fuel Gas 5 ..... gas
Oscar Korns, Ohio Fuel Gas 3 ..... gas
R. C. Bird, East Ohio Gas Co. 2.... gas
Ripley—V. D. & E. Williams, Pure Oil 2 3
Prairie—Wayne F. Kendall, East Ohio Gas 2, 4 ..... gas
J. Clark Smith, Pure Oil 1 100
Hardy—J. W. Eis, Empire Gas & Fuel 1 dry
Scott V. Mast, Logan Gas 2 130
Kilbuck—L. & A. Mohr, Klise-Eckstein-McCann 1 ..... gas

Wells completed 11
Production 263
Dry 1
Gas 6

ATHENS COUNTY
Carthage—W. A. & M. Stout, Logan Gas 1 ..... gas
Church lot, O. F. Sherron & Co. 1.. gas
C. H. Perringer, Waldon & Co. 1... dry
Rome—P. D. Patton, Ohio Fuel Supply 3 gas
Phoebe Barrows, Dunham Bros. 2.. gas
Waterloo—Isaac Hunell, Logan Gas 1.. gas
Troy—C. H. Ford, Ohio Fuel Supply 1 gas

Wells completed 7
Dry 1
Gas 6

COSHOCTON COUNTY
Clark—John Concle, East Ohio Gas 1 48
Perry—Van Winkle, Logan Gas 1 ... 110
White Eyes—Chas. Edinger, Empire Gas & Fuel 1 ..... gas

Wells completed 3
Production 158
Gas 1

CUYAHOGA COUNTY
North Olmstead—F. Saunders, McGraff & Co. 1 ..... gas

GUERNSEY COUNTY
Adams—Mamie M. McCleary, Ohio Oil 1 ..... gas
S. R. Williams, Logan Gas 1 ..... gas

Wells completed 2
Gas 2

FAIRFIELD COUNTY
Rigs
Rush Creek—L. Buran, Ohio Fuel Gas 1.
Wells Drilling
Richland—S. S. Turner, Ohio Fuel Supply 1.
Rigs, 1; wells drilling, 1; total, 2.

KNOX COUNTY
Rigs
Jefferson—J. Rowland, Ohio Fuel Gas 1.
Rilla Rabjohn, Ohio Fuel Gas 3.
C. Arwiller, East Ohio Gas 1.
Wells Drilling
Jefferson—John and Mary Rice, Ohio Fuel Gas 1.
W. I. Greer, East Ohio Gas 2.
Jacob Greer, James E. Greer 1.
Butler—Geo. W. Criss, Upham Gas 1.
Rigs, 3; wells drilling, 4; total, 7.

ASHLAND COUNTY
Wells Drilling
Hanover—John E. Workman, Ohio Fuel Gas 1.
John L. Stoudt, Ohio Fuel Gas 1.
Greene—J. T. Jones, Ohio Fuel Gas 1.
Orange—J. F. Brockaway, Logan Gas 1.
J. W. Callahan, Logan Gas 1.
P. C. Fritzinger, Preston Oil 1.
Dave Umbaugh, Hulse & Kundtz 1.
Mohican—M. H. and J. H. Slater, Burton-Morgan & Stephens 1.
Trov—S. L. Markel, Logan Gas 2.
Rigs, 0; wells drilling, 9; total, 9. W

MEDINA COUNTY
Wells Drilling
Lafayette—C. E. and E. Jones, Arthur & Mills 1.
Montville—Thos. F. Partion, Ohio Fuel Gas 1.
Liverpool—K. and J. Sezanowicis, Ohio Fuel Gas 1.
Phoebe Stroskopt, East Ohio Gas 1.
York—Louisa Ulmer, Logan Gas 3.
J. R. Mayes, Dillon & McFrederick Bros. 1.
Rigs, 0; wells drilling, 6; total, 6.

LORAIN COUNTY
Rigs
Columbia—L. and J. Sabin, Ohio Fuel Gas 1.
Jasper Jasper, Ohio Fuel Gas 1.
I. F. Ring, Ohio Fuel Gas 3.
Wells Drilling
Columbia—John Longbon, Ohio Fuel Gas 1.
Richard Putt, Ohio Fuel Gas 1.
J. Weltzel, Ohio Fuel Gas 1.
Jesse Adams, Logan Gas 2.
J. J. Squires, East Ohio Gas 1.
Oliver Leitner, Empire Gas & Fuel 4.
J. M. and A. Ashman, Wiser Oil 2.
G. and J. Herold, Wiser Oil 4.
Grafton—J. Law, Ohio Fuel Gas 1.
Avon—J. Schmidts, Edson Co. 1.
Rigs, 3; wells drilling, 10; total, 13.

WAYNE COUNTY
Rigs
Paint—J. M. Westcott, Ohio Fuel Gas 1.
Wells Drilling
Wooster—Peter Shelly, Ohio Oil 4.
Frank Miller, Ohio Oil 2.
Wooster Country Club, Burton-Morgan & Stephens 1.
East Union—W. T. Jacot, Logan Gas 1.
F. A. Richwine, Ohio Oil 5.
Cannan—L. Metzker, Logan Gas 1.
Ida M. Snyder, Logan Gas 1.
Millard Fulton, Klise-Eckstein-McCann 2.
Earl Kinch, Wm. Denny & Co. 1.
J. Brinkerhoff, Arthur & Mills 2.
Rigs, 1; wells drilling, 10; total, 11.

HOLMES COUNTY
Rigs
Prairie—W. H. Miller 18, Pure Oil 2.
Hardy—J. R. Forgy, East Ohio Gas 5, 6.
G. and M. Galley, East Ohio Gas 3.
Kilbuck—Albert W. Schonaver, Ohio Oil 2.
Wells Drilling
Monroe—Carl A. Gordon, Empire Gas & Fuel 1.
Elmer E. Connor, Empire Gas & Fuel 2.
B. C. Bird, East Ohio Gas 3.
Wm. Miller, Arkansas Fuel Oil 1.
Prairie—W. H. Miller 17, Pure Oil 1.
Wayne F. Kendall, East Ohio Gas 5.
Byron Kendall, Empire Gas & Fuel 2.
W. S. and E. Baker, Empire Gas & Fuel 1.
Hardy—Harriett McCullough, East Ohio Gas 3.
W. H. Uhl, East Ohio Gas 4.
John R. Hastings, East Ohio Gas 1.
Kilbuck—Robert and Carey Reed, Ohio Oil 1.
J. P. Reese, Empire Gas & Fuel 1.
Paint—Issac Y. Miller, Ohio Fuel Gas 1.
Rigs, 5; wells drilling, 14; total, 19.

JACKSON COUNTY
Rigs
Franklin—Geo. W. Westlake, Ohio Fuel Supply 1.
Wells Drilling
Washington—S. E. Oghier, Ohio Fuel Gas 1.
Rigs, 1; wells drilling, 1; total, 2.

HOCKING COUNTY
Wells Drilling
Benton—Emma Backus, Ohio Fuel Gas 1.

ATHENS COUNTY
Wells Drilling
Carthage—F. Cole, Logan Gas 1.
J. and M. Schuller, Logan Gas 2.
W. O. and Mary Stout, Logan Gas 2.
Lomma T. Runyon, C. A. Cody 1.
Rome—W. P. Barrows, Dunham Bros. 1.
E. S. Byron, H. W. Leeper & Co. 3.
Rigs, 0; wells drilling, 3; total, 3.

COSHOCTON COUNTY
Rigs
Perry—Geo. Oxley, Logan Gas 1.
Newcastle—Warren Giffen, Logan Gas 1.
Rodehaver Canal Bed, Cline Bros. 1.
Wm. Thacher, Upham Gas 1.
Wells Drilling
Clark—John Concle, East Ohio Gas 2.
White Eyes—E. Henderson, Empire Gas & Fuel 1.
Rigs, 4; wells drilling, 2; total, 6.

GUERNSEY COUNTY
Rigs
Adams—M. K. Wells, Lagon Gas 1.
A. G. Summa, Ohio Fuel Gas 1.
Geo. Bell, Ohio Fuel Gas 1.
Rigs, 3; wells drilling, 0; total, 3.

TUSCARAWAS COUNTY
Wells Drilling
Bucks—E. P. Mizer, Logan Gas 1.
L. W. Untersumber, Logan Gas 1.
Rigs, 0; wells drilling, 2; total, 2.

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	6	22	2	0	0	7	7
Hancock	6	85	1	1	1	9	10
Allen	2	25	0	0	0	2	2
Auglaize	1	0	1	0	0	3	3
Sandusky	4	18	0	0	0	3	3
Mercer	1	33	1	2	1	7	8
Van Wert	0	0	0	0	0	3	3
Seneca	0	0	0	0	0	1	1
Lucas	0	0	0	0	0	3	3
Ottawa	3	35	0	0	0	3	3
Darke	2	6	0	1	0	0	0
Shelby	7	163	2	1	0	6	6
Hardin	5	32	0	1	0	3	3
Paulding	2	6	0	0	2	1	3
Defiance	0	0	0	0	0	1	1
Michigan	1	20	0	0	0	3	3
Total Nov.	45	445	7	6	4	55	59
Total Oct.	49	561	7	1	4	55	59
Difference	4	116	0	5	0	0	0

WELLS COMPLETED
WOOD COUNTY
Bloom—E. Goldner, Ohio Oil 32..... 2
Henry—P. J. Shovelin, Ohio Oil 3..... 10
M. Auverter, Ohio Oil 6, 27..... abd
Portage—Henry H. Myers, Ohio Oil 32 2
Mary D. Coffinberry, F. Lee Rouse 11 dry
Liberty—C. Potter, Sun Oil Co. 15.... dry
J. R. Arter, Ohio Oil 29..... 8
Kate L. Case, Vanlue Oil 1..... abd

Wells completed 6
Production 22
Dry 2
Abandoned 3

HANCOCK COUNTY
Liberty—J. K. Wheeler, West End Oil 1 20
A. Schoonover, Harpst Bros 2..... 15
Portage—C. L. Turley, Ohio Oil 7..... dry
Pleasants—Canis Henery, Bath Township Oil 5 45
Eagle—S. D. Powell, L. Cramer 2..... 5
Biglick—J. & E. Saltzman, R. Allen & Co. 1 ..... gas

Wells completed 6
Production 85
Dry 1
Gas 1

ALLEN COUNTY
Bath—S. H. Vore, C. A. Peavey & Co. 2 15
Perry—Kate A. Baker, S. G. Parks & Co. 9 10
Marion—Good-Tugar, Wm. Lang 4, 6 abd
H. Good, Wm. Lang 2..... abd
Spencer—F. Oashle, Ohio Oil 3, 4, 5, 6, 8, 9, 10, 11..... abd
Jackson—Boyd-Zimmer, W. O. Hawk, 1, 2, 3, 4, 5, 6, 7..... abd

Wells completed 2
Production 25
Abandoned 18

AUGLAIZE COUNTY
Moulton—Geo. R. Julian, J. R. Kelly 1, 2 ..... abd
Peter Burke, Sanford Ulrich 1..... abd
Washington—Jos. C. Kohler, Ohio Oil 1 abd
Jackson—J. H. Koester, Crystal Oil 2. dry

Wells completed 1
Dry 1
Abandoned 4

SANDUSKY COUNTY
Jackson—Fannie Havens, Home Oil 1 2
G. Wilhelm, Paul Oil 1..... 7
Scott—M. J. Bowe, Lewis D. Bowe 1, 2, 4, 5, 7, 8, 9, 10, 11..... abd
Madison—C. P. Paul, Paul Oil 1..... 1
Woodville—G. Magsig, Gustave Magsig 26 8

Wells completed 4
Production 18
Abandoned 3

MERCER COUNTY
Hopewell—Geo. F. Hellworth, Home Banking 7 20
Union—C. D. Weist, Mack P. Colt 1... dry
Charles Weist, Mack P. Colt 1..... 10
Daniel Davis, Michael Harley & Co. 23 3
Washington—Patton-Granger, Recovery Oil & Gas 1 ..... gas
J. McAfee, Dillbone & Co. 1..... gas

Wells completed 6
Production 33
Dry 1
Gas 2

LUCAS COUNTY
Oregon—Jane McPhillips, Frank Keister 6 ..... abd

OTTAWA COUNTY
Harris—H. W. Nieman, Sherman, Richards & Co. 12 12
John H. Myers, Ohio Oil 5..... 18
Benton—Fred Fischer, Henry G. Gladieuz 1 5

Wells completed 3
Production 35

DARKE COUNTY
Mississinewa—W. Powell, J. H. Henderson & Co. 3 6
Wayne—Electric Light Lot, Lee A. Watson 1 ..... gas

Wells completed 3
Production 6
Gas 1

SHELBY COUNTY
Cynthian—Henry Danzig, Siagel & Johnston 6 3
John Zimmerman, Wittmer Property Trus. 2 45
H. Barhorst, Wittmer Property Trus. 1 45
H. Wiseman, McKelvey & Co. 2..... 70
A. Walfrom, Maul Oil 1..... gas
McLean—Herman Berning, Robinson & Burke 1 ..... dry
Laramie—Paulus, Unknown 1 ..... dry

Wells completed 7
Production 163
Dry 2
Gas 1

HARDIN COUNTY
McDonel—Geo. Lybarger, Boston-Southwestern Oil & Gas 1..... 15
Geo. W. Strohm, Boston-Southwestern Oil & Gas 1..... 5
William Wallace, Boston-Southwestern Oil & Gas 1..... 7
Jere Cartwright, Sanford Ulrich & Co. 1 5
Marion—Wm. Shadley, McGuffey Oil & Gas 1 ..... gas

Wells completed 5
Production 32
Gas 1

PAULDING COUNTY
Harrison—C. C. Springer, John T. Schunck 4 4
N. D. Claudin, John A. Thompson & Co. 1 2

Wells completed 2
Production 6

MICHIGAN

SAGINAW COUNTY
Saginaw—West Saginaw, Saginaw Prospecting 3 20

WOOD COUNTY
Wells Drilling
Plain—Harley Avery, Schiedt, Hamman & Huston 4.
Henry—David F. Biehler, Ohio Oil 20.
Middleton—Frank Rogers, Otto Brown 6.
Althes Jameson, Leshner & Twining 2.
John Davis, Waterville Gas & Oil 7.
Troy—W. & H. Hartman, Geo. H. Hoffman 7.
Lake—Mrs. Hattie Krimmel, Lantz, Schultz & Co. 2.
Wells drilling, 7.

HANCOCK COUNTY
Rig
Eagle—Alice Stauffer, Star & Clark 8.
Wells Drilling
Eagle—Fred Freed, R. T. Rittenhouse 1.
Liberty—F. Fish, B. Porter 2.
J. Steen, Base Line Oil 8.
J. K. Wheeler, West End Oil 2.
Jane Wheeler, Star & Clark 3.
Allen—J. E. Huntington, Ohio Oil 14.
Marion—J. G. Oberholtzer, Findlay Pet. 14.
Orange—W. W. Eaton, Ohio Oil 14.
Biglick—L. Wanders, River Cave Gas & Oil Syndicate 1.
Rig, 1; wells drilling, 9; total, 10.

ALLEN COUNTY
Wells Drilling
Bath—S. H. Vore, C. A. Peavey & Co. 3.
Wm. Lanney, Delphos Drilling Co. 1.
Wells drilling, 2.

AUGLAIZE COUNTY
Wells Drilling
Moulton—C. & D. Crow, Boston-S. W. Oil & Gas 1.
Chas. Fritz, Wheeling & Zimmerman 1.
Washington—J. Riebesell, E. B. Jack & Co. 1.
Wells drilling, 3.

SANDUSKY COUNTY
Wells Drilling
Madison—C. P. Paul, Paul Oil 2.
Woodville—G. Magsig, Gustave Magsig 29.
Herman Linke, Chas. F. Zeising & Co. 1.
Wells drilling, 3.

MERCER COUNTY
Rig
Gibson—H. Lechner, H. Wison 5.
Wells Drilling
Center—W. M. Miller, Mack P. Colt 12, 13.
C. Nolan, Mack P. Colt 1.
Chas. Wuester, H. H. Cuppler & Co. 1.
Jefferson—A. & A. Metzner, June Oil 1.
Recovery—A. Heetcamp, A. W. Neely & Co. 2.
Rose Fisher, S. W. Tate Jr. 2.
Rig, 1; wells drilling, 7; total, 8.

VAN WERT COUNTY
Wells Drilling
York—Wm. George, Wheeler Oil 4.
Willshire—A. J. Cully, J. H. Harmon 1.

Ridge—J. E. Moore, Calvin Neely & Co. 2.
Wells drilling, 2.

SENECA COUNTY
Well Drilling

Jackson—Philena Flack, Jerry Oil 1.

LUCAS COUNTY
Wells Drilling

Monclova—Wm. Black, Swan Creek Oil & Gas 2.
Amelia Ward, Doblinger Bros. 2.
Jerusalem—R. H. M. A. Eck, Ohio Oil Co. 18.
Wells drilling, 2.

OTTAWA COUNTY
Wells Drilling

Harris—A. F. Allen, Ohio Oil 2.
Amelia Kuhlman, Jake Smith 2.
Catawaba—John Lauden, Underwood Oil & Gas 1.
Wells drilling, 3.

SHELBY COUNTY
Wells Drilling

Cynthian—J. Plieman, Siegel & Johnston 2.
Jose Siegel, Wittmer Property Trus. 3.
J. Moyer, Ft. Laramie Oil & Gas 1.
J. Barhorst, Lee A. Watson 1.
F. Sherman, Elierman Oil 1.
Chas. Broerman, G. B. Willis & Co. 7.
Wells drilling, 5.

HARDIN COUNTY
Wells Drilling

McDonel—Polly McConnell, Boston S. W. Oil & Gas 1.
Mary Clark Irwin, Boston-S. W. Oil & Gas 1.
Wm. Cockley & Co., Cockley Oil 1.
Wells drilling, 2.

PAULDING COUNTY
Rigs

Harrison—C. C. Springer, John T. Schunck 5.
A. M. Bailey, U. S. A. Oil 6.
Well Drilling
Benton—Brady, J. W. McIntosh 2.
Rigs, 2; well drilling, 1; total, 3.

DEFIANCE COUNTY
Well Drilling

Adams—Adams Township Oil & Gas 1.

MICHIGAN
SAGINAW COUNTY
Well Drilling

Saginaw—West Part City, Saginaw Prospecting Co.3

JACKSON COUNTY
Well Drilling

Napoleon—Silvers, Jackson County Oil & Gas 1.

MONROE COUNTY
Well Drilling

Dundee—Frank Roe, Jackson County Oil & Gas 1.

INDIANA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Wells	0	0	0	0	1	1
Jay	6	60	1	0	5	5
Adams	5	62	1	0	3	3
Delaware	0	0	0	0	2	2
Randolph	0	0	0	1	0	1
Gibson	0	0	0	0	2	2
Pike	1	15	0	0	4	4
Sullivan	1	3	0	0	3	3
Allen	0	0	0	0	2	2
Daviess	1	25	0	0	4	4
Hendricks	0	0	0	0	1	1
Jackson	0	0	0	0	1	1
Shelby	0	0	0	0	1	1
Spencer	0	0	0	0	1	1
Lagrange	0	0	0	0	1	1
Total Nov.	14	165	2	1	31	32
Total Oct.	8	166	2	3	23	26
Difference	6	1	0	2	8	6

WELLS COMPLETED
JAY COUNTY

Bear Creek—C. E. Brinterhoff, Will Mesel 2 20
W. F. Metzner, National Supply 2.... 5
Susan Black, National Supply 2..... 20
H. Armontrout, Heeter & Daugherty 9 10
H. Armontrout, Heeter & Daugherty 10 5
A. J. Glentzer, J. C. Yank 1..... abd
Israel Macklin, Will Mesel 1..... abd
B. C. Macy, Hunt & Ainsley 1, 3, 3, 4 abd
Penn—Lenora Gemmell, A. M. Jones 2 dry

Wells completed 6
Production 60
Dry 1
Abandoned 6

ADAMS COUNTY

Jefferson—W. F. Johnson, Geo. S. Lacknett 2 30
Wabash—J. Cook, M. S. Daugherty 1.. 2
A. Burley, M. S. Daugherty 1..... dry
J. C. Steiner, M. S. Daugherty 2..... 20
Armstrong hrs., Chicago Oil 1..... 10

Wells completed 5
Production 62
Dry 1

DELAWARE COUNTY

Delaware — Alice Marquell, Jacob J. Hirsh 1, 2, 3 ..... abd
Annie E. St. Clair, Jacob J. Hirsh 1, 2, 3, 4, 7 ..... abd

Wells abandoned 8

PIKE COUNTY

Logan—Sarah Shoarf hrs., Andrews & Burden 1 15
Madison—C. C. Duffy, Murphy Oil of Pa. 3, 4, 5..... abd
Mary E. Sutton, Murphy Oil of Pa. 2 abd
Sam T. Rumble, Murphy Oil of Pa. 6 abd

Wells completed 1
Production 15
Abandoned 5

DAVIESS COUNTY
KNOX COUNTY

Veale—John Peek, Maple Oil 2..... 25

Harrison—Geo. Like, Intuck Oil 1.... abd
W. E. Harrison, Intuck Oil 1, 2..... abd

Wells abandoned 3

SULLIVAN COUNTY

Turman—W. W. Harris, J. F. Boling & Co. 1 3

WELLS COUNTY
Well Drilling

Chester—Sarah J. Irvin, Fountain City Oil & Gas 2.

JAY COUNTY
Wells Drilling

Bear Creek—D. W. Callahan, J. J. Adams 9
D. W. Bergman, Mesel & Mesel 7.
C. E. Brinterhoff, Will Mesel 3.
H. Armontrout, Heeter & Daugherty 11.
Green—Roe Houck, Bloxsome & Co. 1.
Wells drilling, 5.

ADAMS COUNTY
Wells Drilling

Jefferson — W. F. Johnson, Geo. S. Lacknett 2.
Wabash—J. C. Steiner, M. S. Daugherty 3.
Armstrong hrs., Chicago Oil 2.
Wells drilling, 3.

DELAWARE COUNTY
Wells Drilling

Delaware—Levi Booker, Hoke, Sargent & Co. 1.
J. W. Goings' hrs., DeSoto Oil Syndicate and Houke 9.
Wells drilling, 2.

RANDOLPH COUNTY
Rig

Green—Wl. Cline, T. B. Thorp 2.

GIBSON COUNTY
Wells Drilling

Union—Thos. Compton, J. H. Young & Co. 2.
Barton—Herman Barrett, J. H. Young & Co. 4.
Wells drilling, 2.

PIKE COUNTY
Wells Drilling

Logan—Sarah Shoarf hrs., Andrews & Burden 2.
Rumble-Wilson, Wiser Oil 3.
E. Beck, Alx Singer & Co. 2.
Clay—Claud Loveless, A. B. Bement 3.
Wells drilling, 4.

SULLIVAN COUNTY
Wells Drilling

Turman—Josephine Dix, Ohio Oil and Kennedy 19.
W. D. Harris, J. F. Boling & Co. 4.
Fairbanks—J. F. Harrison, Hollingsworth & Co. 3.
Wells drilling, 3.

ALLEN COUNTY
Wells Drilling

Maumee—J. H. Gerber, Cochran, Kneer & Co. 2.
Wm. Kammyer, Estes, Morrison & Crouch 1.
Wells drilling, 2.

DAVIESS COUNTY
Wells Drilling

Veale—Gaither, Sargent, Hartman & Co. 3.
McDougal, Sargent, Hartman & Co. 5.
John Peek, Maple Oil 3.
Unknown, Washington Parties 1.
Wells drilling, 4.

HENDRICKS COUNTY
Well Drilling

Clay—W. E. Christy, Amo Oil 1.

JACKSON COUNTY
Well Drilling

Near Freetown—Unknown parties 1.

SHELBY COUNTY
Well Drilling

Van Buren—J. Harshburger, L. Nicholson 1.

SPENCER COUNTY
Well Drilling

Dale—Hupper 160 acres, Murray-Howard & Co. 1

LAGRANGE COUNTY
Well Drilling

Howe—Howe Oil & Gas 1.

ILLINOIS FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	3	2	2	0	0	6	6
Cumberland	1	7	0	0	0	1	1
Crawford	3	6	1	0	0	3	3
Lawrence	1	12	0	0	0	4	4
Wabash	18	2,350	3	1	0	26	26
Marion	0	0	0	0	0	2	2
Jackson	0	0	0	0	0	2	2
Morgan	0	0	0	0	0	3	3
Douglass	0	0	0	0	0	1	1
Union	0	0	0	0	0	1	1
Fayette	0	0	0	0	1	1	2
Edwards	0	0	0	0	1	0	1
Jasper	0	0	0	0	0	2	2
Coles	0	0	0	0	0	2	2
Total Nov.	26	2,377	6	1	2	53	55
Total Oct.	25	2,635	5	1	2	53	55
Difference	1	258	1	0	0	0	0

WELLS COMPLETED
CLARK COUNTY

Parker—N. B. Lee, King-Baldridge Oil 5 2
Johnson—I. Neibarger, Wilbur Hickman & Co. 1 ..... dry
Theo. Bennett, Thos. Stewart 13..... dry

Wells completed 3
Production 2
Dry 2

CUMBERLAND COUNTY

Union—J. G. Paden, Campbell, Peck & Co. 2 7

CRAWFORD COUNTY

Martin—A. W. Mann, Frost Oil 3..... 5
Honey Creek—Isaac Conover, Grant Jessup & Co. 1 ..... dry
Robinson—Geo. W. Tracey, Stranahan & Cheuvront 1 1

Wells completed 3
Production 6
Dry 1

LAWRENCE COUNTY

Lawrence—McCormick, Ohio Oil 5..... abd
Petty—R. M. Hardacre No. 2, Ohio Oil 5 12

Wells completed 1
Production 12
Abandoned 1

WABASH COUNTY

Wabash—F. M. Leek, Clark & Orendorf 2 600
N. Alka, Jos. S. Young, Jr. & Co. 1 450
N. Alka, Jos. S. Young, Jr. & Co. 2 250
H. A. Fox, Jos. S. Young, Jr. & Co. 4 50
S. Stergeon, Jos. S. Young, Jr. & Co. 1 dry
Mack Madden, Adams Corner Oil 2.. 200
Ed Armstrong, Adams Corner Oil 1.. gas
Johnson, Art Smith & Co. 1..... dry
Catherine Kiser, Andrews & Ballard 1 25
Catherine Kiser, Andrews & Ballard 2 25
John Breen, Risley & Co. 1..... 375
Harrison, Buchannan, Risley & Co. 1 dry
W. O. Johnson, Tyler, Andrews & Co. 1 ..... dry
Cisil heirs, Cisel Heirs & Co. 1.... 70
John Kogan heirs, Mayhew & Skidmore 2 100
S. J. Stillwell, Wabash Oil 2..... abd
S. J. Stillwell, Wabash Oil 3..... 180
John H. Stillwell, Dr. O'Brian & Co. 1 25

Wells completed 18
Production 2350
Dry 3
Gas 1
Abandoned 1

MARION COUNTY

Centralia—C. Oesterich, Hefter, Joy & Houssler 4 ..... abd

CLARK COUNTY
Wells Drilling

Parker—David Lee, R. A. Young 23.
M. & H. F. Pinnell, Kewance Oil & Gas 35.
Casey—John Laigner, B. H. Heaton & Co. 4.
Martinsville—Nettie Baker, W. C. McBride, Inc. 10.
Wm. Howard, Trenton Rock Oil & Gas 3.
Wells drilling, 5.

CUMBERLAND COUNTY
Well Drilling

Union—J. G. Paden, Campbell, Peck & Co. 3.

CRAWFORD COUNTY
Wells Drilling

Oblong—H. M. Nelson, People's Banking & Trust 9.
A. Heedt, Mahutska Oil 17.
Montgomery—John Booker, R. E. Young & Co. 3.
Wells drilling, 2.

LAWRENCE COUNTY
Wells Drilling

Lawrence—G. C. Dunlap, Saumels, Duffield & Co. 10.
Petty—D. P. Stoltz No. 1, Ohio Oil 9.
Wm. Ross, Silurian Oil 18.
Dennison—H. A. Seed, Ohio-Silurian Oil 5.
Wells drilling, 4.

WABASH COUNTY
Wells Drilling

Wabash—Holson-Dorney, Max Oil 5.
Holson-Dorney, McCoplin Bros. 1.
Holson-Dorney, Doin Oil 2.
O. A. Martin, Straight 8 Oil 2.
John G. Trimble, Jos. S. Young, Jr. & Co. 2.
Barney, Jos. S. Young, Jr. & Co. 1.
Tracey heirs, Risley & Co. 1.
L. G. Stillwell, Risley & Co. 1.
Sallie Compton, Snowden Bros. 1.
John G. Trimble, Snowden Bros. 1.
J. H. McClain, Phipps, Blosser & Co. 1.
John Koogan heirs, Mayhue & Skidmore 3.
Jas. Stillwell, Sargent, Hartman & Co. 2.
Mack Madden, Sargent, Hartman & Co. 1.
Lonna Morgan, Midland Oil & Ref. 2.
J. H. Cisel, Silurian Oil 1.
Diber, Carnes & Co. 1.
Banks, Hope Oil 2.
S. J. Stillwell, Wabash Oil 4, 5.
Mack Madden, Adams Corner Oil 3.
Cisel, Eastern Gulf Oil, Sargent & Co. 1.
W. O. Johnson, Tyler Andrews & Co. 2.
Jesse Cisel, Clark & Orendorf 1.
L. G. Stillwell, Parrott & Co. 1.
Trimble, Risley & Co. 1.
Wells drilling, 26.

MARION COUNTY
Wells Drilling

Sandoval—F. M. Guyon, Ohio Oil 8.
Centralia—H. McIntosh, Timberlake & Co. 1.
Wells drilling, 2.

JACKSON COUNTY
Wells Drilling

Bailey—Rickenburg, Mid-Egypt Oil & Gas 5.
Voge, Unknown 1.
Wells drilling, 2.

MORGAN COUNTY
Wells Drilling

Jacksonville—Sec. 15-9-3w, W. F. Cody 2.
Sec. 15-9-4w. Unknown 1.
N. E. Part Rangel, Jacksonville parties 1.
Wells drilling, 3.

DOUGLASS COUNTY
Well Drilling

Sargent—W. W. Brown, Douglass Oil 1.

UNION COUNTY
Well Drilling

Pilot Knob—Near Alta Pass, W. MacSmith 1.

FAYETTE COUNTY
Rig

Fayette—John Baxter, H. McCurdy 1.
Well Drilling
Fayette—Ohio Oil 1.
Rig, 1; well drilling, 1; total, 2.

EDWARDS COUNTY
Rig

Near Graysville—Porter & Co. 1.

JASPER COUNTY
Wells Drilling

Grandville—W. C. Mills, John Carr & Co. 1.
Arthur Leamon, Pure Oil 1.
Wells drilling, 2.

COLES COUNTY
Wells Drilling

Charleston—Earl Thrailkill, Block Oil 1.
Ashmore—W. P. Green, C. L. Williams 1.
Wells drilling 2.

KENTUCKY-TENNESSEE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	12	77	4	0	0	29	29
Allen	9	50	2	0	0	16	16
Barren	33	254	5	0	0	43	43
Owensboro district	13	130	4	0	0	18	18
Cumberland-Monroe	5	505	3	0	1	13	14
Adair	0	0	0	0	0	1	1
Russell	0	0	0	0	0	2	2
Hopkins	0	0	0	0	0	3	3
Simpson	3	28	1	0	0	3	3
Meade	0	0	0	0	0	1	1
Wayne	5	12	3	0	0	15	15
Lee-Owsley	3	30	0	1	0	14	14
Lawrence-Johnson	7	77	0	0	6	17	23
Johnson-Magoffin	13	88	1	2	2	27	29
Floyd	16	0	4	12	0	18	18
Morgan	0	0	0	0	0	6	6
Elliott	0	0	0	0	1	1	2
Greenup	0	0	0	0	0	1	1
Martin	0	0	0	0	0	2	2
Powell	1	3	0	0	0	1	1
Fatill	0	0	0	0	0	9	9
Wolfe	1	0	0	1	0	2	2
Jackson	0	0	0	0	0	1	1
Boyd	0	0	0	0	0	1	1
Breathitt	0	0	0	0	0	1	1
McCreary	0	0	0	0	0	2	2
Menifee	0	0	0	0	0	2	2
Kentucky	121	1,254	27	16	10	249	259
Tennessee	5	300	3	0	3	15	18
Mississippi	0	0	0	0	3	11	14
Alabama	0	0	0	0	0	6	6
Georgia	0	0	0	0	1	4	5
Total Nov.	126	1,554	30	16	17	285	302
Total Oct.	141	1,625	39	4	15	271	286
Difference	15	71	9	13	2	14	16

WELLS COMPLETED
WARREN COUNTY
(Western Kentucky)

Bowling Green—J. M. Morgan, Moken Oil Co. 4 10
Bessie Snell, New Domain Oil 8.... 10
Brownfield, Onsel-Harnahan Oil 6.. 12
Manning, Teague & Co. 2 20
Hobson heirs' Penhoma Oil 18..... 5
Cal Snell, Lincoln Oil 2 5
Vance, Illinois-Kentucky Oil 6..... 10
Covington, Evans Oil 7 5
J. Briggs, Sam Katz 13 ..... dry
Baker-Jones, Hogan Bros. 3 ..... dry
S. K. Motley, unknown 1 ..... dry
C. P. Barlow, A. Allen & Co. 2..... dry

Wells completed 13
Production 77
Dry 4

ALLEN COUNTY

Scottsville—J. H. Rickman, Rickman & Larman 13 10
Harry Williams, unknown 1 2
John Buchanon, Buchanon & Buchanon 6 1
Earl Oliver, M. S. H. Oil 1 5
J. R. Hornbuckle, L. P. Pake 5 2
C. Mayhew, Andrus & Millet 5 5
Meador, Pinkey White 1 25
Bradley, Kiser & Co. 1 ..... dry
Virgil McGuire, Ziegler & Co. 3..... dry

Wells completed 9
Production 50
Dry 2

BARREN COUNTY

Glasgow—Ritchie, Star Oil Co. 39..... 3
Adwell, Star Oil Co. 1 ..... dry
G. Mayfield, Houchins Leasehold Oil 9 2
M. Mayfield, Houchins Leasehold Oil 8 3
Pitcock, Houchins Leasehold Oil 15.. 3
Everett, Kopel Oil 1 3
Reed, Fred Moore 1 ..... dry
Travis, Fred Moore 12 3
Gassaway, Fred Moore 5 3
Taylor Mansfield, Ziegler Bros. 18.. 8
Taylor Mansfield, Ziegler Bros. 19... 12
Taylor Mansfield, Ziegler Bros. 20.. 3
Taylor Mansfield, Ziegler Bros. 21... 6
Drennon, Ziegler Bros. 8 5
Drennon, Ziegler Bros. 9 8
Hall, Wood Oil Co. 1 ..... dry
Hucherson, Wood Oil Co. 1 1
Hucherson, Wood Oil Co. 2 2
John Church, Wood Oil Co. 10 8
Houck Bros., Wood Oil Co. 7 3
Depp-Greer, L. J. Emery, Jr., & Sons 18 5
McGlocklin, Porter & Co. 11 8
White-Smith, Harrington & Norris 1 3
White-Smith, Harrington & Norris 2 20
Maddox, Harrington & Norris 1..... dry
Evans, Harrington & Norris 11..... 25
Tompkinsville road, Tyler Oil 1 ... dry
Depp, Consolidated Gas Co. 10..... 3
Duff, Consolidated Gas Co. 3..... 5
Duff, Consolidated Gas Co. 5..... 40
Duff, Consolidated Gas Co. 6..... 50
Dean, Esslinger Oil Co. 2 5
Dean, Esslinger Oil Co. 3 5

Wells completed 33
Production 264
Dry 5

OWENSBORO DISTRICT

Owensboro—C. S. Veach, Leeper Oil 1 5
S. Collier, Leeper Oil 4 15
Ira Jett, Leeper Oil 3 3
Rogers, Andrus & Co. 1 ..... dry
Mikliff, White Plains Oil 1 10
R. B. Powers, Pennsylvania-Indiana Oil 4 50
L. E. Crowe, C. E. Daugherty 7 ... 25
Howard, Pirth & Smith 1 2
Bert Thompson, Spice Knob Dev. Co. 5 10
W. G. Payne, Kentucky Oil 2 10
Jackson, Creek Drilling Co. 4 ..... dry
Heffer, Creek Drilling Co. 1 ..... dry
S. Flowers, White & Nicklin 1..... dry

Wells completed 13
Production 130
Dry 4

CUMBERLAND-MONROE COUNTIES

Burkesville—D. Cheatham, Alta Oil Co. 1 500
Sarah Sheckles, Wilcox Bros. 5 5
Sarah Sheckles, Wilcox Bros. 4 ..... dry
T. L. Bow, Freeman & McCormick 7 dry
Page, Thrasher & Co. 2 ..... dry

Wells completed 5
Production 505
Dry 3

SIMPSON COUNTY

Franklin—Alex Smith, Lincoln Oil Co. 1 dry
Slate, Slate Bros. 1 3
Slate, Slate Bros. 2 25

Wells completed 3
Production 28
Dry 1

(EASTERN DIVISION)
WELLS COMPLETED
WAYNE COUNTY

Monticello—W. T. Ashberry, J. H. Hatfield 4 ..... dry
P. L. Harmon, J. C. Bronner 4 ..... dry
Bridgman, Bowden & Co. 1 ..... dry
T. T. Davis, Vulcan Oil 15 10
Barnett heirs, D. C. Adkins 2

Wells completed 5
Production 12
Dry 3

LEE-OWSLEY COUNTIES

Idamay—Gourley - Redman - McGuire, Black Gum Oil 15 20
Huntington, Kentucky-Indiana Synd. 6 10
New Era Land Co., D. J. Johnson 4 gas

Wells completed 3
Production 30
Gas 1

LAWRENCE-JOHNSON COUNTIES

North Weir—L. P. Ferguson, Union Gas & Oil Co. 10 15
G. Evans, Union Gas & Oil Co. 12.. 20
J. N. Sparks, Holland & Wade 2 ... 7

J. N. Sparks, Holland & Wade 1... 4
Chas. Bailey, Garrison & Townsend 2 10
W. W. Bailey, Garison & Townsend 2 6
Sandford Lyon, Union Gas & Oil 24 15

Wells completed 7
Production 77

JOHNSON-MAGOFFIN COUNTIES

South Weir—Abe Caudill, Petroleum Exploration 41 8
Dan Harman, Paintsville Oil 7 5
Jess Borders, Oliver Jenkins 3 3
W. H. Canley, Bed Rock Pet. 29 ... 3
Jas. Love, Somerset Oil 16 25
Mary Burke, R. G. Gillispie 3 18
Mary Burke, R. G. Gillispie 1 6
Mary Burke, R. G. Gillispie 2 15
F. M. Tackett, M. A. Wheeler 1..... 2
H. Howard, Carter Oil 1 3
Spurlock, Atlantic Oil 1 ..... dry
Fych Oil Co. lands, Fych Oil 3 ... gas
Fych Oil Co. lands, Fych Oil 4 ..... gas

Wells completed 13
Production 88
Dry 1
Gas 2

FLOYD COUNTY

Isenville—Wm. Martin, New Domain Oil 3 ..... gas
Bone Martin, Ohio Fuel Oil 2 ..... dry
Mousie Martin, Ohio Fuel Oil 2 ..... dry
Elk Horn Coal lands, Ohio Fuel Oil 1 gas
Elk Horn Coal lands, Ohio Fuel Oil 2 gas
J. D. Turner, Ohio Fuel Oil 1 ..... gas
J. D. Turner, Ohio Fuel Oil 2 ..... gas
J. D. Turner, Ohio Fuel Oil 3 ..... dry
Tandy Martin, Louisville Gas & Electric 3 ..... dry
Kate Spencer, Eastern Carbon Black Co. 2 ..... gas
Summitt area, American Roller Mills 15 ..... gas
Summitt area, American Roller Mills 16 ..... gas
Summitt area, American Roller Mills 17 ..... gas
Summitt area, American Roller Mills 18 ..... gas
Summitt area, American Roller Mills 19 ..... gas
G. Stumbo, Louisville Gas & Electric 1 ..... gas

Wells completed 16
Dry 4
Gas 12

POWELL COUNTY

District No. 15.—J. Baker, W. O. Dunham 1 3

WOLFE COUNTY

Torrent—Devil Creek, Petroleum Exploration 1 ..... gas

TENNESSEE
CLAY-JACKSON COUNTIES

Tinsley Bottom—Hamp Lynn, Dafoe and Associates 6 250
Draper, Rex Pyramid Oil 2 50
D. C. Mitchell, Coe Bros. 1 ..... dry
Near Granville, Bentley & Co. 1..... dry

Wells completed 4
Production 300
Dry 2

HARDEMAN COUNTY

Boliver—Brown Sane, Spring Valley Development Co. ..... dry

(WESTERN DIVISION)
WARREN COUNTY
Wells Drilling

Bowling Green—G. Davenport, T. A. Sheridan 9, 10.
Biddle, Cadet O. & G. Co. 24.
H. Jenkins, Wilson & Co. 2.
Stone, Foster & Co. 8.
Bessie Snell, New Domain O. & G. 9.
Keller, Art F. Haynes 1.
Brownfield, Onsel-Harnahan Oil 7.
Cal Snell, Lincoln Oil Producing 3.
Manning, Golden Fluid Oil 3.
Davenport, Wood Oil 23.
Grimes, Wood Oil 12.
Christian, Phillips & Stewart 2.
Vance, Illinois-Kentucky Oil 7.
Potter, Moore & White 9.
Shannon, Collins and others 7.
Duncan, D. T. Boiling 1.
Crowe, Ed Thessen 5.
Moulder, Ed Thessen 1.
W. P. Hutton, P. H. Lavelle 8.
Worden, C. P. Taneyhill 1.
Bryant, H. A. Henry 12.
Smith, Essex Pet. Co. 7.
E. Morehead, Hodge & Smith 2.
Morehead, Downing & Co. 3.
J. H. Barbee, Wood & Co. 3, 4.
Thomas, Smith and associates 1.
Ford, Roy Hogan 7.
Rigs, 0; wells drilling, 29; total, 29.

ALLEN COUNTY

Scottsville—Lee Moore, Lee Moore 6.
W. E. Oliver, A. E. Meffert 15.
Joe Reed, McMullen & Co. 3.
Beam, Keyes Oil 1.
Devine, unknown 1.
E. Hinton, Clarion-Pittsburgh Oil 4.
Kerley, Nell-Huebring Co. 13.
Vern Douglass, Mrs. La Duc 1.
Graves, W. K. White 3.
Meador, W. K. White 2.
S. & K. Thaton, Victor DeCaigney 5.
G. W. Pearson, J. F. Wuerth 11.
C. R. Boller, Boller & Stump 1
A. Meredith, G. W. Hahn 11.
Edmonds, Keystone Securities Co. 13.
Cockrill, Holland & Cockrill 6.
Rigs, 0; wells drilling, 16; total, 16.

BARREN COUNTY
Wells Drilling

Glasgow—Russell, Star Oil 5.
Pitcock, Houchins Leasehold Co. 16, 17.
H. Meyers, Kopel Oil 2.
Warder, Elem O. & G. 11.
Jackman, B. B. Rice 2.
Jewell, Wood Oil 1.
Howard, Fred Moore 9.
McCubbin, Fred Moore 11.
Bradford, Ziegler, Hice & Co. 4.
Taylor Mansfield, Ziegler Bros., 22, 23, 24.
F. Preston, L. J. Emery, Jr., & Sons 3.
Richardson, L. J. Emery, Jr., & Sons 1, 2.
Depp-Greer, L. J. Emery, Jr., & Sons 19.
Depp-Greer 36 acres, L. J. Emery, Jr., & Sons 1.
Cassidy, Hiland Oil Co. 10, 11.
Chamberlin, Helper & Gorby 4.
W. Bales, T. L. Gorby 1.
McGlocklin, Porter & Co. 12.
Unknown, Young and associates 1.
Richards, Whitlock & Co. 3.
Dean, Esslinger Oil 4, 5.
Unknown, Williams & Co. 1.
Boles, Smith & Son 1.
Brown, D. M. Wilson 1.
Hucherson, Wood Oil Co. 3.
J. B. Rogers, Keyes Oil Corp. 1.
Jump, Keyes Oil Corp. 2.
Houck Bros., Wood Oil 8, 9.
Maddox heirs, Harrington & Norris 2.
John Francis, T. L. Gorby 1.
Grimstead, unknown parties 1.
Duff, Consolidated Gas Co. 7, 8.
Depp, Consolidated Gas Co. 11, 12, 13.
Rigs, 0; wells drilling, 43; total, 43.

OWENSBORO DISTRICT
Wells Drilling

Owensboro—A. Rogers, Diamont & Thompson 1.
T. F. Willis, L. J. Emery, Jr. 1.
Jas. Miller, Leonard & Co. 1.
Keith, Foster Oil Co. 1.
Keith, Petroleum Extraction Co. 1.
R. B. Powers, Pennsylvania-Indiana Oil 5.
Jess Swope, Pennsylvania-Indiana Oil 9.
L. Mercer, Pennsylvania-Indiana Oil 1.
L. E. Crowe, C. E. Daugherty 8.
Susan Collier, Leeper Oil 5.
Ira Jett, Leeper Oil 4.
Lafe Payne, I. N. Harkless 1.
Amanda Stewart, Kentucky Oil 19.
J. R. Johnson, Kentucky Oil 3.
F. V. Miller, Panther Creek Oil 10.
Abe Howe, Fred Carson 5.
G. V Barlow, Stevens & Co. 1.
O. T. Burdette, White & Nicklin 7.
Rigs, 0; wells drilling, 18; total, 18.

CUMBERLAND-MONROE COUNTIES
Rigs

Burkesville—Morgan, Sam Baird 1.
Wells Drilling
Burkesville—H. Welles, W. S. Raydure 4.
Cain, E. D. C. Cain, Lynch 3.
M. Blythe, Gartlan estate 5.
Sarah Sheckles, Wilcox Bros. 6.
Melton, Wilcox Bros. 2.
Davidson, Wilcox Bros. 1.
J. B. Riddle, W. S. Raydure 2.
O. Cheatham, Alta Oil 1.
D. Baker, Weddle 1.
Hunter Short, Morris Pet. Co. 4.
G. W. Strange, J. G. Whitlatch 1.
Hicks, Grant & Co. 1.
Hughes, Reid, McClintock & Heckathorne 2.
Rigs, 1; wells drilling, 13; total, 14.

ADAIR COUNTY
Wells Drilling

Columbia—F. Guthrie, C. D. McLennon 1.

RUSSELL COUNTY
Wells Drilling

Creelsboro—B. F. Leach, Carnahan Oil 4.
N. Blesdee, Creelsboro parties 1.
Rigs, 0; wells drilling, 2; total, 2.

HOPKINS COUNTY
Wells Drilling

Nortonville—Holliman, Copper Flash Oil 12, 13, 14.
Rigs, 0; wells drilling, 3; total, 3.

SIMPSON COUNTY
Wells Drilling

Franklin—Hogan, Small & Sully 11.
Slate, Slate Bros. 3.
Jim Peart, Mullin & Reagle 9.

MEADE COUNTY
Wells Drilling

Gaston, Eva Carrington, W. S. Proper 1.

(EASTERN DIVISION)
WAYNE COUNTY
Wells Drilling

Monticello—S. Henninger, Illiken Oil 3.
Bridgman, Spradlin & Marsh 12.
N. H. Crofton, E. M. Shearer & Co. 14.
J. B. Stinson, J. H. Kennedy 2.
Chas. Harmon, J. C. Marsh & Co. 1.
J. Reis, Bertram & Marsh 1.
J. T. Hatfield, Marsh & Shearer 1.
Upchurch, Head Brown & Co. 4.
Coffey heirs, Bell, Bell & Co. 3.
B. S. Huffaker, B. S. Huffaker 3.
H. Thompson, W. M. Black 1.
Dave Adkins, Dave Adkins 1.
J. O. Brown, Shearer, Marsh & O'Keefe 5.
Dabney, Wood Pet. Co. 1.
S. Morrow, Beaver Pet. 1.
Rigs, 0; wells drilling, 15; total, 15.

LEE-OWSLEY COUNTIES
Wells Drilling

Idamay—Logan Combs, Combs Bros. Dev. 1.
E. Evans, Combs Bros. Dev. 5.
Gourley—Redman & McGuire, Black Gum Oil 16.
T. Horeman, Standard Oil Co. of Kentucky 1.
Baker, Watkins & Co. 1.
Elmer Evans, Combs & Flemming 2.
Huntington, Kentucky-Indiana Oil 7.
Fred Adams, Combs Bros. Dev. 4.
Dave Maye heirs, Hupp, Duff & Co. 14.
Burms, Gross & Eaton 1.
Hignett, Benton & Co. 1.
Miller, Prewitt & Goff 10.
Unknown, Superior Oil 1.
Jas. Hogan, G. S. McDonald 5.
Rigs, 0; wells drilling, 14; total, 14.

LAWRENCE-JOHNSON COUNTIES
Rigs

North Weir—L. H. Skaggs, Union Gas & Oil 11.
J. J. Skaggs, Cumberland Pet. 4.
Robt. Fyfee, Pluto Oil 6.
J. D. Bons, J. T. Hare & Son 3.
W. E. Skaggs, Hovis & Young 3.
C. Osborne, Skaggs, Miller & Co. 1.
Wells Drilling
North Weir—P. P. Holbrook, Union Gas & Oil 34.
G. Evans, Union Gas & Oil 13, 14.
C. K. Dobyne No. 2, Union Gas & Oil 8.
C. E. Frailey, Union Gas & Oil 7.
Sandford Lyon, Union Gas & Oil 25.
Mary Holbrook, J. B. Cheuvront 3.
Ira Lester, Wm. Stone & Co. 8.
Jesse, Rose, Indian-Texas Pet. 11.
L. T. Sparks, Garrison & Townsend 6, 7, 8.
C. K. Dobyne, Garrison & Townsend 18, 19, 20, 21.
J. C. Gilliam, Indian-Texas Pet. 13.
Rigs, 6; wells drilling, 17; total, 23.

JOHNSON-MAGOFFIN COUNTIES
Rigs

South Weir—W. H. Collins, Petroleum Exploration 3.
Eliza Powers, Clyde Oil 6.
Wells Drilling
South Weir—Abe Caudill, Petroleum Exploration 40.
Shephard, Petroleum Exploration 1.
W. Powers, Clyde Oil Co. 1.
J. J. Prater, Structure Oil 11, 12.
Mary Borders, Petroleum Exploration 2.
W. H. Conley, Bed Rock Pet. 30.
W. E. Patrick, Bed Rock Pet. 3.
Oscar Wheeler, Hudson & Collins 3, 4, 5.
Mary Burke, R. G. Gillispie, 4, 5.
W. P. Adams, Oliver Jenkins & Co. 7.
Coon Adams, Oliver Jenkins & Co. 1.
Jas. Love, Somerset Oil 11.
F. M. Hale, Cooper & Sublett 3.
Gardner, New Domain O. & G. 13.
Sam Blanton, R. G. Gillispie 17.
F. M. Moore, R. G. Gillispie 6.
Jess Adams, Model Oil 4.
J. H. Arnett, J. H. Arnett 12.
Allen, Holbrook & Co. 1.
Licking River, Fych O. & G. 5, 6, 7, 8.
Rigs, 3; wells drilling, 27; total, 29.

FLOYD COUNTY
Wells Drilling

Isenville—T. Collins, Yolondo Oil 2.
M. Martin, Ohio Fuel Oil 2, 3.
Elk Horn Coal Corp., Ohio Fuel Oil 3, 4, 5.
Miller, Ohio Fuel Oil 2.
J. D. Turner, Ohio Fuel Oil 4.
Mary Martin, Louisville G. & E. Co. 2, 3.
Tandy Martin, Louisville G. & E. Co. 4.
T. Allen, New Domain 5.
Ike Osborne, Distell-Martin Co. 1.
Kate Spencer, Eastern Carbon Black Co. 3.
Jack Turner, Eastern Carbon Black Co. 1.
Jack Turner, Eastern Carbon Black Co. 4.
Summitt area, American Roller Mills 20, 21.
Rigs, 0; wells drilling, 18; total, 18.

MORGAN COUNTY
Wells Drilling

West Liberty—Goose, Blue Hills Dev. Co. 4.
Edge of West Liberty, Burns O. & G. 1.
W. H. Bailey, Wallace, Bailey & Co. 1.
Unknown, Mid South 1.
Reed, Collier & Spradoan 1.
5 Miles northeast of West Liberty, Jim Patton 1.
Rigs, 0; wells drilling, 6; total, 6.

ELLIOTT COUNTY
Rigs

Sandy Hook—J. F. Dials, Campbell, Wheeler & Co. 3.
Wells Drilling
Sandy Hook—B. A. Lewis, Smith & Garrison 2.
Rigs, 1; wells drilling, 1; total, 2.

GREENUP COUNTY
Wells Drilling

Greenup—E. R. Coleman, E. E. Fyore 1.

MARTIN COUNTY
Wells Drilling

Inez—Al Carter, Big Derby O. & G. 2.
Mayo properties, Leonard & Ralph 5.
Rigs, 0; wells drilling, 3; total, 2.

POWELL COUNTY
Wells Drilling

District 15,—A Stewart, W. O. Dunham 1.

ESTILL COUNTY
Wells Drilling

Irvine—I. Henry, unknown 1.
Owen Puckett heirs, Superior Oil 2, 3.
George Cain, Miller & Chiles 1, 2.
J. B. Rogers, Mountain Springs Oil 8, 9, 10.
Reed heirs' C. O. Ansler & Co. 1.
Rigs, 0; wells drilling, 9; total 9.

WOLFE COUNTY
Wells Drilling

Torrent—600-acre tract, Petroleum Exploration 10.
H. Johnson, Petroleum Exploration 1.
Rigs, 0; wells drilling, 2; total, 2.

JACKSON COUNTY
Wells Drilling

McKee—Upchurch Bros. 2.

BOYD COUNTY
Wells Drilling

Ashland—Sam J. DeBond & Co. 2.

BREATHITT COUNTY
Wells Drilling

Quicksand—Dukat and others 2.

McCREARY COUNTY
Wells Drilling

Sterns Coal Land, Brown & Co. 1, 2.

MENIFEE COUNTY
Wells Drilling

Leatherwood—Widow Reed, McKinney Bros. 1.
Hamp Rawlins, W. O. Back 3.
Rigs, 0; wells drilling, 2; total, 2.

TENNESSEE
CLAY AND JACKSON COUNTIES
Rigs

Tinsley Bottom—Williams, Dafoe and others 6.
Draper, Dafoe and others 4.
Wells Drilling
Tinsley Bottom—Hamp Lynn, Dafoe and associates 7, 8.
Joe Lynn, E. C. Edenfield 1.
Crabtree, W. J. Gibson 1, 2.
Jef Loftus, English & Turner 1.
Connor, Tri State Oil 2.
Stillhouse Creek, unknown 1.
Rigs, 2; wells drilling, 6; total, 8.

FENTRESS COUNTY
Rigs

Pall Mall—Head of Wolfe Creek, Phelps. Toomey & Co. 1.
Wells Drilling
Pall Mall—Alvin York, Pat Smith 1.
Tan Bark, Tennessee Stave & Lumber Co. 1.
Rigs, 1; wells drilling, 2; total, 3.

OVERTON COUNTY
Wells Drilling

Livingston—3 Miles east of Livingston, A. H. Hisey & Co. 1.
Windle, Duncan & Co. 1.
Rigs, 0; wells drilling, 2; total 2.

PUTNAM COUNTY
Wells Drilling

Cookeville—Double Springs, Clarke & Co. 1.

MORGAN COUNTY
Wells Drilling

Sunbright—Ash, Russell Producing Co. 1.
Widow Ellis, Russell Producing Co. 1.
Griffith, Indiana parties 1.
Near Sunbright, Bonecamp Oil Co. 1.
Rigs, 0; wells drilling, 4; total, 4.

MISSISSIPPI
RANKIN COUNTY
Rigs

Jackson—Pearl River, New York parties 1.
Wells Drilling
Jackson—7-3-3, Finkbine Lumber Co. 2.
Rigs, 1; wells drilling, 1; total, 2.

COPIAH COUNTY
Rigs

Hazelhurst—Near Brandywine, B. W. White 1.

HOLMES COUNTY
Wells Drilling

Coxburg—18-3-1, Freerun Oil 1.

YAZOO COUNTY
Wells Drilling

Eden—I. S. Reed, 25-13-1w, Willis & Burns 1.

SCOTT COUNTY
Wells Drilling

Forest—Section 21-6-8, Graham, Mississippi O. & G. Synd. 1.

CLAIBORNE COUNTY
Wells Drilling

Port Gibson—5-11-3, Young, Mississippi Exploration Co. 1.
6-11-1, Westside, Michael Zink 1.
Rigs, 0; wells drilling, 2; total, 2.

HINDS COUNTY
Wells Drilling

Jackson—Reeder, Jackson Oil 1.

WASHINGTON COUNTY
Wells Drilling

Glen Allen—30-14-9, Williams, Alhambra Oil & Gas 1.

TISHIMINGO COUNTY
Wells Drilling

Iuka, Unknown parties 1.

TALLAHATCHIE COUNTY
Wells Drilling

Charleston—23-25-2, Harvey, Shreveport parties, 1.

MARSHALL COUNTY
Wells Drilling

Holly Springs—33-2-3, Hoffman, T. B. Slick 2.

UNION COUNTY
Rigs

New Albany—10 miles northeast of New Albany, Jean De Villiard 1.

ALABAMA
MORGAN COUNTY
Wells Drilling

Albany—6-6-4, English, Albany-Decatur Oil 1.

BALDWIN COUNTY
Wells Drilling

Bay Minette—21-2-3, Evans, Stoll Oil 1.

SUMPTER COUNTY
Wells Drilling

Cortopa—Sam W. Kendall 1.

HALE COUNTY
Wells Drilling

Greenburg—Hale Oil 1.

SHELBY COUNTY
Wells Drilling

Chelsea—Scott, Cooksey Oil 1.

WILCOX COUNTY
Wells Drilling

Selma—Blue Belle Oil 1.

GEORGIA
PULASKI COUNTY
Rigs

Hawkensville—Florida Construction Co. 1.

JEFF DAVIS COUNTY
Wells Drilling

Hazelhurst—Mid-Georgia Co. 1.

TELFAIR COUNTY
Wells Drilling

Scotland—Telfair Oil 1.

BURKE COUNTY

GreenCut—Three Creeks Oil 1.

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WHAT AND WHERE TO BUY

A Classified Index of Advertisers in This Publication

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Southwestern Engineering Co., Inc.
Tulsa Boiler & Machinery Co.

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Hope Engineering & Supply Co.
Newton Process Mfg. Co.

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Oxweld Acetylene Co.

Acetylene—Dissolved—
Pres-O-Lite Co., Inc.

Acetylene in Cylinders—
Prest-O-Lite Co., Inc.

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Chicago Bridge & Iron Works.
Kaw Boiler Works Co.
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Parkersburg Rig & Reel Co.

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Hughes Tool Co.
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C

Cable Bit Steel—
Andrews Steel Co.
Federal Supply Co.
Heppenstall Forge & Knife Co.

Cables—Drilling, Manilla—
Ajax Rope Co., Inc.
Columbian Rope Co.
Frick-Reid Supply Co.
Republic Supply Co.
Wall Rope Works, Inc.

Cables—Steel—
Ajax Rope Co., Inc.
American Cable Co.
Black Steel & Wire Co.
Broderick & Bascom Rope Co.
Bridgeport Machine Co.
Continental Supply Co.
Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A. & Sons Rope Co.
Longhart Supply Co.
National Supply Co.
Republic Supply Co.
Wickwire-Spencer Steel Corp.

Calf Rope—
Ajax Rope Co., Inc.
Columbian Rope Co.

Calf Wheels—Steel—
International Derrick & Equipment Co.
Moore, Lee C. & Co., Inc.

Cannon—Oil Field—
Braden Co.

Cans—Carrying—
Columbian Steel Tank Co.

Cans—Water—
Gott, H. P. Mfg. Co.

Capping Steel—
Andrews Steel Co.

Carbon—Black Diamond—
Diamond Drill Carbon Co.

Cars—Tank—
American Car & Foundry Co.
General American Tank Car Corp.
Shippers' Car Line, Inc.

Cars—Tank, Leased—
American Car & Foundry Co.
North American Car Co.
Shippers' Car Line, Inc.

Casing—
Bovaird Supply Co.
Continental Supply Co.
Jarecki Mfg. Co.
National Supply Co.
National Tube Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Casing—Wrought Iron—
Reading Iron Co.
South Chester Tube Co.

Casing Connections—
Bridgeport Machine Co.

Casing Elevators (See Elevators, Casing and Tubing)—

Casinghead Gasoline Equipment—(See Natural Gasoline Plant Equipment)—

Casing Head—Control—
Oil Well Improvements Co.

Casing Heads—
Dresser, S. R. Mfg. Co.
Kansas City Hay Press Co.
Oil Well Improvements Co.

Casing Lines—
Ajax Rope Co., Inc.

Casing Packers (See Packers)—

Casing Pulleys (See Pulleys)—

Casing Shoes—
Baker Casing Shoe Co.
Bartlesville Supply Co.
Bridgeport Machine Co.
Guiberson Corp.
Oil Well Supply Co.

Casing Tongs (See Tongs)—

Casing Tools—
Bridgeport Machine Co.

Castings—Alloy Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Brass—
Progressive Brass Mfg. Co.

Castings—Chrome Nickel Steel—
Sivyer Steel Casting Co.

Castings—Corrosion Resisting Non Ferrous—
Hills-McCanna Co.

Castings—Electric Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Grey Iron—
Ajax Iron Works.
American Car & Foundry Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.

Castings—Steel—
Ajax Iron Works.
Chicago Steel Foundry Co.
Ohio Steel Foundry Co.
Nugent Steel Casting Co.
Sivyer Steel Casting Co.

Cement—Fire & High Temperature—
Botfield Refractories Co.

Cement—Portland—
Monarch Cement Co.

Centrifugal Pumps (See Pumps)—

Chain Pipe Tongs (See Tongs)—

Chains—Conveying—
Chain Belt Co.
Link-Belt Co.

Chains—Oil Well—
Chain Belt Co.
Link-Belt Co.
Lufkin Foundry & Machine Co

Chains—Power Transmission—
Chain Belt Co.
Link-Belt Co.

Check Valves (See Valves)—

Chemical Glassware for Laboratory Use (See Glassware)—

Chemical Treatment Crude Oil Emulsion—
Barnickel, Wm. S. & Co.

Chrome Nickel Steel Castings (See Castings)—

Circulating Heads—
Wilson Oil Tools Corp.

Clamps—Anchor—
Bartlesville Supply Co.

Clamps—Belt—
Federal Supply Co.

Clamps—Collar Leak—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Clamps—Hoisting—
Newton Process Mfg. Co.

Clamps—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Clamps—River—
Dresser, S. R. Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Cocks—Brass and Iron—
Lunkenheimer Co.
Walworth Mfg. Co.

Cocks—Plug—
Homestead Valve Mfg. Co.

Cocks—Water Gauge—
Smith Separator Co.

Coils and Bends—Pipe—
Harrisburg Pipe & Pipe Bending Co.
Midwest Piping & Supply Co.

Collar Leak Clamps—(See Clamps)

Compounds—Boiler—
Dearborn Chemical Co.

Compressor Cylinders (See Cylinders—Compressor)—

Compressor—Air—
Bessemer Gas Engine Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Gardner Governor Co.
Sullivan Machinery Co.
Worthington Pump & Machinery Corp.

Compressors—Ammonia—
Carbondale Machine Co.
Cooper, C. & G. Co.

Compressors—Direct Connected Motor and Gas Engine Driven
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Miller Improved Gas Engine Co.

Compressors—Direct Driven Air and Gas—
Bessemer Gas Engine Co.
Miller Improved Gas Engine Co.

Compressors—Gas—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
National Transit Pump & Machine Co.

Compressors—Portable—
Ingersoll-Rand Co.

Condenser Boxes—
Kaw Boiler Works Co.
Petroleum Iron Works Co.

Condensers—
Southwestern Engineering Co., Inc.

Consulting and Contracting Engineers (See Engineers)—

Controllers—Liquid Level—
Fisher Governor Co., Inc.
Newton Process Mfg. Co.
Smith Separator Co.

Controllers—Pressure—
Smith Separator Co.

Controllers—Temperature—
Brown Instrument Co.
Foxboro Co., Inc.
Taglabue, C. J., Mfg. Co.
Taylor Instrument Co.

Conveyors—Portable Belt—
Barber-Greene Co.

Cooling Towers—Atmospheric—
Braun, C. F. & Co.

Cordage—
Bridgeport Machine Co.
Continental Supply Co.
Frick-Reid Supply Co.
International Supply Co.
Wall Rope Works, Inc.

Core Drilling—
Longyear, E. J. Co.
Mineral Exploration Co.
Spengler Core Drilling Co.

Core Drills—Diamond—
Longyear, E. J. Co.
Sullivan Machinery Co.

Coring Tools—
Reed Roller Bit Co.
Spengler Core Drilling Co.
Wilson Oil Tools Corp.

Couplings—Flexible—
Nuttall, R. D. & Co.

Couplings—Plain End Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Couplings—Seamless Steel—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—
Dayton Pipe Coupling Co.

Corrugated Sheets, Black and Galvanized (See Sheets)—

Cracking Processes—
Graver Corp.
Kellogg, M. W. Co.
Universal Oil Products Co.

Crawler Threads—
Full-Crawler Co.

Crown Blocks—
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.
Slater Brothers Turnbuckle Derrick Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Borden Co.
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
The Texas Co.

D

Dehydrating Process—
Barnickel, Wm. S. & Co.

Dephlegmators—
Newton Process Mfg. Co.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Carnegie Steel Co.
Emsco Steel Products Co.
International Derrick & Equipment Co.
Moore, Lee C. & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Slater Bros. Turnbuckle Derrick Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.
Slater Bros. Turnbuckle Derrick Co.

Diamond Core Drills (See Core Drills—Diamond)—

Diamonds for Core Drilling—
Diamond Drill Carbon Co.
Patrick, R. S.

Die Heads—Automatic Screw Cutting—
Landis Machine Co.

Die Heads—Bolt Threading—
Bignall & Keeler Machine Works.
Landis Machine Co.

Die Heads — Stationary Pipe Threading—
Bignall & Keeler Machine Works.
Landis Machine Co.
Standard Engineering Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Machine Works.
Borden Co.
Cox & Sons Co.
Landis Machine Co.
Nye Tool & Machine Works.
Standard Engineering Co.

Differential Pressure Recorders (See Recorders)—

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Dissolved Actelyene (See Acetylene)—

Distillate—
Acme Petroleum Co.

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co.

Draw Works—
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling and Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Burns Tool Co.
Continental Supply Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines (See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.

Drilling Gate Valves (See Valves)

Drilling Machines—
Bridgeport Machine Co.
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools (See Drilling and Fishing Tools)—

Drilling Valves (See Valves)—

Drills—Portable, Air—
Chicago Pneumatic Tool Co.

Drills—Portable Electric—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drop-Forged Wrenches (See Wrenches)—

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electric Apparatus (See Apparatus—Electric—

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Pumping and Pulling Motors (See Pumping and Pulling Motors—Electric)—

Electric Steel Castings — (See Castings—Electric Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
Forgan, Geo. N.

Enamels—
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Hope Engineering & Supply Co.
Kellogg, M. W. Co.
Power Specialty Co.
Westcott & Griess.

Engineers—Fire Protection—
Foamite-Childs Corp.

Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.

Engineers—Oil Treating—
Barnickel, Wm. S. & Co.

Engines—Crade Oil—
Power Mfg. Co.
Western Machinery Co.

Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines—Drilling—
Ajax Iron Works.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Continental Supply Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Lufkin Foundry & Machine Co.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

Engines—Gas—
Bessemer Gas Engine Co.
Bruce-MacBeth Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M. Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Gasoline—
Buda Co.
Buffalo Gasolene Motor Co.
Climax Motors Corp.
Continental Motors Corp.
Fairbanks-Morse & Co.
International Harvester Co. of America.
Novo Engine Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-rse & Co.
Franklin Valveless Engine Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

Engines—Rotary Steam—
Baker Motors, Inc.

Engines—Semi-Diesel, Oil—
Chicago Pneumatic Too! Co.
Power Mfg. Co.

Engines—Steam—
Ajax Iron Works.
Baker Motors, Inc.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

Evaporators—
Newton Process Mfg. Co.

Expansion Pistons (See Pistons)—

Extinguishers—Fire—
Foamite-Childs Corp.
Amdyco Corp.

F

Fabricators for Gasoline Plants and Refineries—
Stearns-Roger Mfg. Co.

Fence—Chain Link—
Page Fence & Wire Products Association.

Filters—
Metric Metal Works.

Fire Brick (See Brick)—

Fire Extinguishers (See Extinguishers)—

Fishing Tools (See Drilling and Fishing Tools)—

Fish Tail Bits (See Bits)—

Fittings—Dropped Forged Steel—
Carbondale Machine Co.
Vogt, Henry, Machine Co.

Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Kelly & Jones Co.
Walworth Mfg. Co.

Fittings—Pipe—
American Cast Iron Pipe Co.
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Lufkin Foundry & Machine Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kelly & Jones Co.
Ohio Steel Foundry Co.
Pittsburgh Reinforced Brazing & Machine Co.

Flanges—Brass, Iron and Steel—
Kelly & Jones Co.
Metric Metal Works.

Flange Unions—
Gaso Pump & Burner Mfg. Co.

Flashlights—
Delta Electric Co.
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works
Columbian Steel Tank Co.

Floodlights—
Pyle-National Co.

Floor Circle Braces (See Braces)

Force Feed Lubricators (See Lubricators)—

Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

Forgings—
Champion Machine & Forging Co.
Milwaukee Forge & Machine Co.

Friction Clutch Pulleys (See Pulleys)—

Fuel Oil (See Oil—Fuel)—

G

Gas and Oil Gate Valves (Se Valves)—

Gas Compressors (See Compressors—Gas)—

Gas Engines (See Engines—Gas)

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gas Meters (See Meters)—

Gas Oil (See Oil—Gas)—

Gasoline—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.

Gasoline—Natural—
Chestnut & Smith Corp.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Chicago Bridge & Iron Works.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Kellogg, M. W., Co.
Marietta Mfg. Co.
Newton Process Mfg. Co.

Gas Regulator Casinghead—
Davis Regulator Co.

Gas Regulators—
Chaplin Fulton Mfg. Co.
Davis Regulator Co.
Fisher Governor Co.
Metric Metal Works.
Smith Separator Co.

Gas Scrubbers—
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.

Gauges—Automatic Tank—
Oil Conservation Engineering Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Foxboro Co., Inc.
Metric Metal Works.

Gauges—Test—
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Nuttall, R. D., & Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Steam—
Baker Motors, Inc.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glass Bottles (See Bottles, Glass)

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Dodge Mfg. Corp.

Hatchet—Gauge and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
Newton Process Mfg. Co.
Southwestern Engineering Co., Inc.

Heat Interchangers—Fluid—
Braun, C. F. & Co.

High Pressure Gate Valves (See Valves)—

Hoists — Pneumatic, Geared and Universal—
Chicago Pneumatic Tool Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Well Pulling—
Emsco Steel Products Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F. Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hot Rolled Strip Steel (See Steel)

Hydraulic Gate Valves (See Valves)—

Hydraulic Jacks (See Jacks)—

I

Insulation Materials—
Celite Products Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Spang & Co.

Jars—
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Acme Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lanterns—Hand—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lifting Jacks (See Jacks)—

Lighting Equipment—
Climax Engineering Co.
Pyle National Co.
Westinghouse Electric & Mfg. Co.

Liquid Level Controls (See Controllers)—

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricating Oils (See Oils)—

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Oil Conservation Engineering Co.

Manifolds—
Reid, Joseph, Gas Engine Co.

Metal Buildings Sectional (All Types (See Buildings)—

Meters—Gas—
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M. Co.
Westcott and Greis.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsbuh Meter Co.

Molded Goods—Rubber—
Goodyear Tire & Rubber Co.

Motor Controlled Apparatus (See Apparatus—Motor Control)—

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

Motor Trucks (See Trucks—Motor)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment
American Tank Co.
Chaplin-Fulton Mfg. Co.
Continental Supply Co.
Cooper, C. & G., Co.
Griscom-Russell Co.
Roots, P. H. & F. M., Co.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Engines, Semi-Diesel (See Engines—Semi-Diesel Oil)—

Oil Field Equipment—
Baash-Ross Tool Co.
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Boiler Works Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Trumble Gas Trap Co.

Oil Filters—
Burt Mfg. Co.

Oil—Fuel—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Gas—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Lubricating—
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Fennzoil Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.

Oil Refinery Equipment (See Refinery Equipment)—

Oil Savers—
Oil Well Improvements Co.

Oil Securities (See Securities)—

Oil Suction and Discharge Hose (See Hose)—

Oil Testing Instruments—
Tagliabue, C. J., Mfg. Co.

Oil Well Cementing—
Halliburton, Erle P.

Oil Well Screens (See Screens)—

Oil Well Tools—
Dunn Mfg. Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Star Drilling Machine Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.

Packing—
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.
United States Rubber Co.

Paints—
Aluminum Co. of America.
Continental Supply Co.
Cook Paint & Varnish Co.
Detroit Graphite Co.
Eagle-Picher Lead Co.
Sherwin-Williams Co .

Pariffin Wax Plant Equipment—
Carbondale Machine Co.

Pipe—Cast Iron—
American Cast Iron Pipe Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.

Pipe—Steel—
Greenspon's, Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Son, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Pipe—Wrought Iron—
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
Superior Tube Co.

Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co.
Landis Machine Co.
Ryerson, Jos. T., & Son, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Fittings (See Fittings)—

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Ditchers (See Ditchers)

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threading Dies (See Dies)—

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.

Piping—Fabricated—
Kelly & Jones Co.
Midwest Piping & Supply Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.
United Iron Works.

Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.

Piston—Expansion—
Wilson Oil Tools Corp.

Pistons—Slush Pump—
Guiberson Corp.

Plain End Pipe Couplings (See Couplings—Plain End Pipe)—

Plugs—Bottom Water—
Guiberson Corp.

Polish Rods (See Rods—Polish)—

Portable Drilling Rigs (See Rigs)

Power Puller—
Jones Oil Well Reamer Co.

Power Pumps (See Pumps)—

Power Units—Portable (See Engines)—

Pre-Heaters—
Newton Process Mfg. Co.

Pulleys—Casing—
Bridgeport Machine Co.

Pulleys—Friction Clutch—
Havana Mfg. Co.

Pulleys—Wood, Iron and Steel—
Dodge Mfg. Corp.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axelson Machine Co.
Goulds Mfg. Co.
Jones, S. M., Co.
Myers, F. E., Bro. & Co.
Northern Equipment Co.
Oil Well Supply Co.
Prescott Co.
Waukesha Motor Co.

Pumping Hangers—
Bridgeport Machine Co.

Pumping Jacks (See Jacks)—

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Powers—
Aldrich Pump Co.
Bessemer Gas Engine Co.
Buda Co.
Climax Engineering Co.
Frick-Reid Supply Co.
Jones, S. M. Co.
Kansas City Hay Press Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Air Lift—
Ingersoll-Rand Co.

Pumps—Boiler Feed—
Ajax Iron Works.
Fairbanks-Morse & Co.
Gardner Governor Co.
Oil Well Supply Co.
Worthington Pump & Machinery Corp.

Pumps—Centrifugal—
American Well Works.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Aldrich Pump Co.
Bessemer Gas Engine Co.

Pumps—Electric—
Prescott Co.

Pumps—Fuel Oil Service—
Aldrich Pump Co.
Blackmar Rotary Pump Co.
Northern Fire Apparatus Co.

Pumps—Fuel Oil Transfer—
Aldrich Pump Co.

Pumps—Gear Driven—
Aldrich Pump Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

Pumps—Pipe Line—
Aldrich Pump Co.
Frick-Reid Supply Co.
Gardner Governor Co.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Power—
Aldrich Pump Co.
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.

Myers, F. E. Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.
Worthington Pump & Machinery Corp.

Pumps—Refinery—
Aldrich Pump Co.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Kinney Mfg. Co.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Worthington Pump & Machinery Corp.

Pumps—Rotary—
Blackmer Rotary Pump Co.
Northern Fire Apparatus Co.
Roots, P. H. & F. M. Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Vogt Brothers Mfg. Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Worthington Pump & Machinery Corp.

Pumps—Water—
Aldrich Pump Co.
American Well Works.
Gaso Pump & Burner Mfg. Co.
Northern Fire Apparatus Co.
Prescott Co.

Purifiers—Oil Absorption—
Sharples Specialty Co.

Pyrometers—
Brown Instrument Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Toledo Pipe Threading Machine Co.

Ratchet Stocks and Dies—
Toledo Pipe Threading Machine Co.

Ratchet Wrenches (See Wrenches)

Reamers—
Bridgeport Machine Co.
Jones Oil Well Reamer Co.

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Metric Metal Works.

Refinery Equipment—
American Radiator Co.
Braun, C. F. & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W. Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Ross-Meehan Foundries.
Reid, Joseph, Gas Engine Co.
Smith Separator Co.
Southwestern Engineering Co. Inc.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.

Refinery Pumps (See Pumps)—

Refractories—Furnace, Stills and Baffles—
Bottfield Refractorise Co.

Refrigerating Machinery—
Carbondale Machine Co.
Climax Engineering Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Fisher Governor Co., Inc.
Oil Conservation Engineering Co.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
Bradford Rig & Reel Co.
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
Carnegie Steel Co.
Emsco Steel Products Co.
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

River Clamps (See Clamps)—

Rods—Polish—
Bradford Motor Works.
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Kansas City Bolt & Nut Co.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Nut & Bolt Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.

Rods—Valve—
Jones, S. M., Co.

Roofing—
Johns-Manville, Inc.

Roofing—Tin Plates (See Tin Plates—Roofing)—

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.
Wall Rope Works, Inc.

Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Bovaird Supply Co.
Broderick & Bascom Rope Co.
Bridgeport Machine Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons Rope Co.
Wickwire-Spencer Steel Corp.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Disc Bits (See Bits)—

Rotary Drilling Equipment—
Climax Engineering Co.
Continental Supply Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Drive Bushings (See Bushings—Rotary Drive)—

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Rock Bits (See Bits)—

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rotary Ventilators—(See Ventilators)—

Rubber Belting (See Belting)—

Rubber Hose (See Hose)—

Run Down Tanks (See Tanks)—

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Line Caps—
Oil Well Improvements Co.

Sand Lines—Manila—
Ajax Rope Co., Inc.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Wickwire-Spencer Steel Corp.

Sand Pumps (See Pumps, Sand)

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws—Temper—
Burns Tool Co.

Seamless Steel Couplings (See Couplings—Seamless Steel) —

Securities—Oil—
Pforzheimer, Carl H. & Co.

Separators—Centrifugal—
Miller, Max B. & Co.
Sharples Specialty Co.

Separators—Gas and Oil—
American Tank Co.
Smith Separator Co.

Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.

Sheets—Blue Annealed—
Kansas City Bolt & Nut Co.

Sheets — Corrugated, Black and Galvanized
American Sheet & Tin Plate Co.
Ryerson, Jos. T. & Son, Inc.

Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Slush Pump Pistons (See Pistons)—

Slush Pump—(See Pumps)—

Smoke Stacks—
Donovan Boiler Works.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Solders—Bar and Wire—
Eagle-Picher Lead Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.

Special Steel (See Steel Special)

Split Sleeves (See Sleeves)—

Sprockets—Power Transmission—
Ajax Iron Works.
Chain Belt Co.

Stationary Pipe Threading Die Heads (See Die Heads)—

Steam Pumps—(See Pumps)—

Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.

Steel—Alloy—
Central Steel Co.

Steel—Bit—
Central Steel Co.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Central Steel Co.

Steel Band Wheels (See Band Wheels—Steel)—

Steel Bridges—(See Bridges)—

Steel Bull Wheels—(See Bull Wheels—Steel)—

Steel Castings (See Castings)—

Steel Couplings for Casing, Line Pipe, Drill Pipe and Tubing (See Couplings)—

Steel Crown Blocks (See Crown Blocks)—

Steel Derricks—(See Derricks)—

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Fittings (See Fittings)—

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Slater Brothers Turnbuckle Derrick Co.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Boiler Works Co.
Petroleum Iron Works Co.
Tulsa Boiler & Machinery Co.
Vogt, Henry, Machine Co.

Steel Sheet—(See Sheets, Steel)—

Steel Valves (See Valves—Steel)—

Steel Walking Beams (See Walking Beams—Steel)—

Steel Wheels and Tug Rims—
Carnegie Steel Co.
Emsco Steel Products Co.
International Derrick & Equipment Co.

Stills—
Blaw-Knox Co.
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Boiler Works Co.
Kellogg, M. W, Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

Stocks and Dies—
Toledo Pipe Threading Machine Co.

Structural Steel Fabricators (See Steel Fabricators)—

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sucker Rods (See Rods—Sucker—

Suction Pumps—(See Pumps)—

Sulphuric Acid—
Eagle-Picher Lead Co.

Swab Rubbers—
United States Rubber Co.

Swabs—
Guiberson Corp.
Hoffman Mfg. Co.

Swedge Nipples—
Dresser, S. R. Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swing Joints—
Oil Conservation Engineering Co.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Cars (See Cars—Tanks)—

Tank Cars Leased (See Cars)—

Tank Equipment—
Oil Conservation Engineering Co.
Westcott & Greis.

Tanks—Bolted—
American Tank Co.
Butler Mfg. Co.
Gantz Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Columbian Steel Tank Co.
Graver Corp.

Tanks—Cylindrical—
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works.

Tanks—Field Storage—
American Car & Foundry Co.
American Tank Co.
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
Tulsa Boiler & Machinery Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Columbian Steel Tank Co.
Graver Corp.
Kaw Boiler Works Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works Co.
Newton Process Mfg. Co.

Tanks—Truck—
American Tank Co.
Butler Mfg. Co.
Columbian Steel Tank Co.
White Co

Tanks—Underground—
Butler Mfg. Co.
Columbian Steel Tank Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tulsa Boiler & Machinery Co.

Tanks—Welded—
American Tank Co.
Chicago Bridge & Iron Works.
Gantz Tank Co.

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.

Tee Casing Heads (See Casing Heads)—

Temperature Controllers (See Controllers—Temperature)—

Temper Screws (See Screws)—

Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Foxboro Co., Inc.
Tagliabue, C. J., Mfg. Co.
Taylor Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co.
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tin Plates—Bright—
American Sheet & Tin Plate Co.

Tin Plates—Roofing—
American Sheet & Tin Plate Co.

Tires—Automobile—
Continental Supply Co.

Tongs—
Bridgeport Machine Co.
Dunn Mfg. Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Rooler Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Guiberson Corp.

Tongs—Chain Pipe—
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tool Joints—
Bridgeport Machine Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.

Tool Joint Tongs (See Tongs)—

Tools—Fishing and Drilling (See Drilling and Fishing Tools)—

Tools — Oil Well Drilling (See Drilling and Fishing Tools)—

Torches—
Oxweld Acetylene Co.

Tractor Oil (See Oil—Tractor)—

Tractors—
International Harvester Co. of America.
Rock Island Plow Co.

Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.

Trenches—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
General Motors Truck Co.
International Harvester Co. of America.
White Co.

Truck Tanks (See Tanks)—

Truck Tires (See Tires—Truck)—

Tube Cutting Machines—
Cox & Sons Co.

Tubes—Boiler, Charcoal Iron—
Reading Iron Co.

Tubes—Boiler Steel—
National Tube Co.
Ryerson, Jos. T. & Son, Inc.

Tubing—
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Elevators (See Elevators, Casing and Tubing)—

Tubing Rings—
Oil Well Improvements Co.

Tubular Goods—
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.

Tubular Goods—Wrought Iron—
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Turbine Generators (See Generators—Turbine)—

Turnbuckle Derricks (See Derricks)—

U

Underground Tanks—(See Tanks)

Underreamer Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamer Cutter Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamers—
Bridgeport Machine Co.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Continental Supply Co.
Kelly & Jones Co.

V

Vacuum Pumps (See Pumps)—

Valuations—
American Appraisal Co.

Valves—Blow-off—
Homestead Valve Mfg. Co.

Valves—Brass and Bronze—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Mfg. Co.

Valves—Cast Steel—
Homestead Valve Mfg. Co.

Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.

Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves — Gate — High and Low Pressure—
Chapman Valve & Mfg. Co.
Continental Supply Co.
Crane Co.
Darling Valve & Mfg. Co.
Kelly & Jones Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.

Valves—Iron—
Lunkenheimer Co.
Reading Steel Casting Co.

Valves—Metal Pump—
Durabla Mfg. Co.

Valves—Relief—Supersensitive—
Davis Regulator Co.

Valves—Steel—
Edward Valve & Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Metric Metal Works.
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.
Reading Steel Casting Co.

Valves—Tank Vent—
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

Varnishes—
Sherwin-Williams Co.

Ventilators—Rotary—
Swartwout Co.

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Moore, Lee C., & Co., Inc.

Water Gauge Cocks (See Cocks)—

Water Pumps (See Pumps)—

Water Softeners and Filters—
Graver Corp.

Water Well Screens (See Screens)

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welded Tanks—(See Tanks)—

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Page Fence & Wire Products Association
Wilson Welder & Metals Co.

Well Drilling and Fishing Tools—(See Drilling and Fishing Tools)—

Well Drilling Equipment (See Drilling Equipment)—

Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.

Wheels—Steel Automotive—
Budd Wheel Co.

Winches—
Braden Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel)—

Wire Rope (See Rope—Wire)

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
Bradford Motor Works.
D. & B. Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Northrup Equipment Co.
Oil Well Supply Co.

Working Barrel Valves (See Valves—Working Barrel)—

Wrenches—Drop Forged—
Williams, J. H., Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for October

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	4,346,820	140,220
Gulf Pipe Line Co.	822,895	26,545
Texas Pipe Line Co.	550,605	17,763
Magnolia Pet. Co.	1,075,461	34,692
Empire Pipe Line Co.	788,170	25,425
Cosden Pipe Line Co.	636,971	20,547
Sinclair Pipe Line Co.	1,422,900	45,900
*Other lines	8,773,000	283,000
Total October	18,416,822	594,092
Total September	18,220,224	607,340
Difference	196,598	13,248

Shipments

†Prairie Pipe Line Co.	3,990,645	128,731
Gulf Pipe Line Co.	1,202,285	38,799
Texas Pipe Line Co.	746,565	24,083
Magnolia Pet. Co.	1,337,817	43,155
Empire Pipe Line Co.	794,177	25,619
Cosden Pipe Line Co.	857,706	27,668
†Sinclair Pipe Line Co.	2,536,944	81,837
*Other lines	9,145,000	295,000
Total October	20,611,139	640,892
Total September	18,850,808	628,359
Difference	1,760,331	12,533

Stocks

*Prairie Oil & Gas Co.	26,822,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil	7,117,409
The Texas Co.	4,444,168
Magnolia Pet. Co.	6,682,552
Empire Pipe Line Co.	3,325,579
Cosden Pipe Line Co.	1,864,496
Sinclair Crude Oil Purchasing Co.	23,490,000
Carter Oil Co.	16,804,714
*Other lines	10,250,000
Total November	102,710,918
Total October	103,897,697
Difference	1,186,779

*Estimated. †Prairie shipments include Texas crude oil. Sinclair shipments include Texas and Wyoming crude oil.

Note: Stocks do not include 6,000,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES
Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept. '25	Oct. '25
Nat. Transit	158,910.27	160,485.98
S. W. Pa. Pipe	91,875.31	88,614.81
Eureka P. L.	357,506.00	369,311.62
Buckeye P. L. (Macksb'g)	296,333.41	303,780.86
Buckeye P. L. (Cleveland)	13,396.16	13,981.45
Buckeye P. L. (Lima, etc.)	130,649.37	137,521.41
Indiana P. L.	11,048.88	9,506.89
Cum'land P. L.	293,295.97	292,906.37
N. Y. Transit	18,511.37	20,573.89
Tidewater P. L.	149,530.51	150,134.69
Pure Oil	175,849.14	152,452.25
Emery P. L.	49,086.36	48,956.62
Indian Ref.	93,929.45	86,547.46
Paragon Dev.	28,258.77	28,235.35
Pittsburgh P. L.	7,110.31	7,323.62
Total	1,875,291.08	1,890,833.27
Daily average	62,509.70	60,994.62

Note—Indian Refining Co. also reported other receipts of 434,724.08 bbls. Paragon Refining Co. had other receipts of 128,-901.10 bbls. Paragon Development had other receipts of 2,562.46 bbls. Pure Oil had other receipts of 64,163.76 bbls. Pittsburgh P. L. had other receipts of 505.13 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept. '25	Oct. '25
Nat. Transit	382,049.14	397,576.55
S. W. Pa. Pipe	341,809.20	364,951.95
Eureka P. L.	170,953.05	135,027.77
Buckeye P. L. (Macksb'g)	98,553.82	133,331.42
Buckeye P. L. (Cleveland)	1,400.95	969.15
Buckeye P. L. (Lima, etc.)	793,826.27	795,060.85
Indiana P. L.	963,603.95	995,708.07
Cum'land P. L.	138,622.92	157,874.91
Southern P. L.	22,373.37	651.00
Crescent P. L.	10,701.14	.....
N. Y. Transit	550,263.53	466,894.84
Northern P. L.	129,295.69	73,874.32
Tidewater P. L.	144,975.14	175,398.69
Pure Oil	260,864.22	244,601.70
Emery P. L.	48,658.90	48,308.05
Paragon Ref.	39,045.65	98,916.25
Indian Ref.	476,931.09	378,805.98
Paragon Dev.	30,183.33	32,046.70
Pittsburgh P. L.	7,461.20	7,077.88
Total	4,701,572.76	4,507,036.03
Daily average	156,719.09	145,388.26

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept. '25	Oct. '25
Nat. Transit	903,098.26	964,802.37
S. W. Pa Pipe	791,307.63	721,496.86
Eureka P. L.	1,372,542.87	1,492,661.69
Buckeye P. L. (Macksb'g)	266,078.56	244,229.22
Buckeye P. L. (Cleveland)	63,568.69	57,105.89
Buckeye P. L. (Lima, etc.)	3,568,404.32	3,509,002.32
Indiana P. L.	556,281.70	595,464.31
Cum'land P. L.	587,800.60	571,941.31
Southern P. L.	510,359.39	528,343.58
Crescent P. L.	10,066.11	.....
N. Y. Transit	681,344.81	812,350.18
Northern P. L.	782,710.21	735,413.58
Pure Oil	360,508.97	355,376.69
Emery P. L.	26,778.95	26,957.36
Paragon Ref.	171,653.02	200,996.85
Indian Ref.	119,181.06	260,559.26
Paragon Dev.	6,319.53	5,428.40
Pittsburgh P. L.	3,748.32	4,720.44
Total	10,781,753.06	11,086,850.31
Increase	192,728.26	305,097.25

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October showing the gross stocks of the above fields:

	Sept. '25	Oct. '25
Penna.	3,740,211.77	3,842,909.55
Lima	1,244,314.67	1,135,862.12
Kentucky	1,243,334.36	1,143,060.43
Mid-Cont.	4,514,989.02	4,850,093.71
Illinois	38,903.24	114,924.20
Total	10,781,753.06	11,086,850.31

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1922	1923	1924	1925
Jan.	67,702	75,790	62,638	56,831
Feb.	75,096	71,092	68,023	60,606
Mar.	78,531	76,592	68,721	60,575
April	75,462	75,614	71,058	63,063
May	77,592	77,265	67,945	59,217
June	76,192	77,593	63,230	61,270
July	76,435	71,379	64,208	62,639
Aug.	79,387	76,910	59,942	59,686
Sept.	78,512	72,358	62,930	62,510
Oct.	77,209	76,256	64,976	60,995
Nov.	75,313	70,762	56,282	.....
Dec.	73,351	69,271	55,814	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1922	1923	1924	1925
Jan.	119,792	171,067	145,518	157,889
Feb.	111,362	164,219	148,732	160,868
Mar.	127,753	185,487	147,098	154,591
April	127,068	170,751	147,611	151,429
May	127,840	177,102	134,997	146,995
June	137,638	173,598	143,010	149,487
July	137,872	168,330	124,187	161,338
Aug.	153,275	142,766	123,120	161,730
Sept.	158,761	137,266	127,325	156,719
Oct.	165,345	134,597	123,170	145,388
Nov.	165,677	131,426	124,400	.....
Dec.	172,861	139,909	151,892	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1923	1924	1925
Jan.	14,040,567	12,907,202	11,258,276
Feb.	14,028,487	11,844,068	11,192,924
Mar.	13,873,146	10,906,752	11,158,297
April	13,737,575	10,922,742	11,062,032
May	13,815,622	11,335,309	11,207,562
June	14,541,253	11,544,204	11,093,764
July	14,645,584	12,062,361	11,067,453
Aug.	14,770,539	12,221,676	10,974,481
Sept.	14,803,444	12,206,836	10,731,753
Oct.	14,504,111	12,664,061	11,086,850
Nov.	14,157,726	12,268,530	.....
Dec.	13,444,361	11,583,680	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1924—	Receipts	Shipments	Stocks
Oct.	3,342.40	1,880.50	14,590.82
Nov.	2,700.13	482.89	12,427.56
Dec.	3,120.34	2,659.13	12,888.77
1925—			
Jan.	1,730.86	1,881.15	12,938.68
Feb.	2,702.05	4,564.70	11,075.83
Mar.	3,177.21	2,354.30	11,893.74
April	3,040.41	1,780.11	13,159.04
May	2,814.99	5,719.90	10,954.13
June	3,052.75	1,291.93	12,035.05
July	2,639.34	3,174.10	11,550.39
Aug.	3,316.97	1,577.99	13,189.27
Sept.	2,929.99	5,352.05	10,767.21
Oct.	2,869.75	1,499.34	12,137.62

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1	1,999,337.34
Runs from wells	677,366.72
Other receipts	528,592.26
Regular deliveries	548,167.67
Other deliveries	671,360.40

The amount of Illinois oil run by the Tidewater Pipe Co. in October was 29,165.28 bbls. and deliveries were 85,514.65 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1924—	Runs	Deliveries
October	741,767.42	543,863.77
November	650,147.62	521,459.21
December	640,919.23	595,943.28
1925—		
January	695,513.43	572,304.77
February	626,635.20	514,661.52
March	754,335.62	611,348.49
April	622,865.14	637,242.85
May	692,671.94	568,573.62
June	700,090.46	589,535.24
July	724,481.26	584,713.19
August	673,652.38	650,643.97
September	706,434.87	510,697.61
October	706,532.00	633,682.32

The Tidewater Pipe Co., Ltd., also delivered in October 290,167.58 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 551,080.92.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per week—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
July	36,127	79,851	265,331	98,042	89,873	569,254	.....	39,515	.....	.....	39,515	608,769
August	25,515	68,432	223,097	35,000	92,806	444,850	.....	35,903	.....	4,067	39,970	484,820
September	17,269	35,931	212,100	86,569	89,600	441,469	.....	36,869	.....	.....	36,869	478,338
October	21,455	29,806	143,388	68,642	41,321	304,612	.....	.....	.....	.....	.....	304,612

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per week—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
July	93,709	55,845	304,612	123,515	156,485	733,866	173,873	233,455	35,679	53,291	501,298	1,235,164
August	70,455	62,097	226,515	107,933	175,224	742,224	147,744	228,291	15,515	29,858	423,258	1,165,482
September	70,700	41,521	289,321	61,600	194,521	657,693	115,500	168,469	37,800	14,700	336,469	994,162
October	149,709	94,836	275,933	44,030	160,755	725,291	175,000	207,739	13,752	20,321	416,812	1,142,103

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS

1924—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountain	Eastern Fields	Total
November:	Month	17,767,034	15,955,620	10,731,264	2,597,460	3,461,050	1,965,921	2,788,110	2,941,000	58,207,459
	Daily average	592,234	531,854	357,709	86,582	115,035	65,531	92,937	98,033	1,940,348
December:	Month	18,795,126	16,031,185	11,264,915	2,537,443	3,380,511	1,870,876	2,802,888	3,000,850	59,183,794
	Daily average	606,294	517,135	363,384	81,853	109,049	60,351	74,287	96,402	1,909,155
1925—										
January:	Month	18,743,288	15,463,800	13,790,195	2,520,858	3,275,484	1,774,072	3,627,676	3,065,998	61,263,366
	Daily average	604,622	498,800	444,845	81,318	105,758	57,228	84,760	98,903	1,976,238
February:	Month	16,869,833	13,905,780	11,361,896	2,466,660	2,886,296	1,647,461	2,666,335	2,905,000	54,609,261
	Daily average	602,494	496,635	405,782	88,095	103,082	55,265	95,226	103,750	1,950,333
March:	Month	18,626,009	14,403,716	13,047,068	2,824,524	3,564,473	1,807,517	2,734,235	3,282,000	60,289,552
	Daily average	600,839	464,636	420,886	91,114	114,983	58,307	88,201	105,871	1,944,502
April:	Month	17,959,653	14,065,450	13,683,520	2,971,110	7,560,240	1,695,780	2,744,691	3,167,000	62,927,444
	Daily average	598,655	468,515	422,784	99,037	252,008	56,526	91,490	107,150	2,036,693
May:	Month	18,820,328	14,486,579	13,165,005	3,493,266	11,813,996	1,887,729	2,799,542	3,167,300	69,633,745
	Daily average	607,107	467,309	424,678	112,686	381,097	60,572	90,308	102,171	2,246,250
June:	Month	19,288,135	13,832,970	12,583,740	3,175,440	9,200,372	1,900,506	2,754,498	3,389,000	66,124,661
	Daily average	642,938	461,099	419,458	105,848	306,679	63,350	91,816	109,000	2,133,952
July:	Month	20,411,049	14,263,565	12,390,917	3,686,675	7,335,819	1,898,178	3,129,199	3,348,000	66,963,402
	Daily average	658,021	460,115	396,804	118,925	262,768	61,231	100,942	108,000	2,160,110
August:	Month	21,005,580	14,441,040	11,919,066	3,558,087	7,450,571	1,843,043	3,168,014	3,177,004	66,562,406
	Daily average	677,599	465,840	384,486	114,777	240,341	59,453	102,194	102,484	2,147,158
September:	Month	20,062,763	14,335,040	11,224,830	3,393,270	6,457,950	1,782,870	3,138,300	3,212,000	64,097,023
	Daily average	668,759	494,168	374,161	113,109	215,965	59,429	104,455	107,067	2,136,567
October:	Month	20,015,076	14,921,199	11,378,333	3,477,146	6,409,281	1,872,121	3,384,500	3,379,000	64,846,656
	Daily average	645,648	481,329	367,043	112,166	206,751	60,391	109,500	109,000	2,161,555
	Total 12 months	229,363,874	176,584,944	145,540,749	36,701,949	73,299,043	21,846,074	34,347,988	38,124,147	754,708,768
	Daily average	625,654	483,794	398,742	100,553	200,819	59,852	93,830	104,450	2,067,695

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